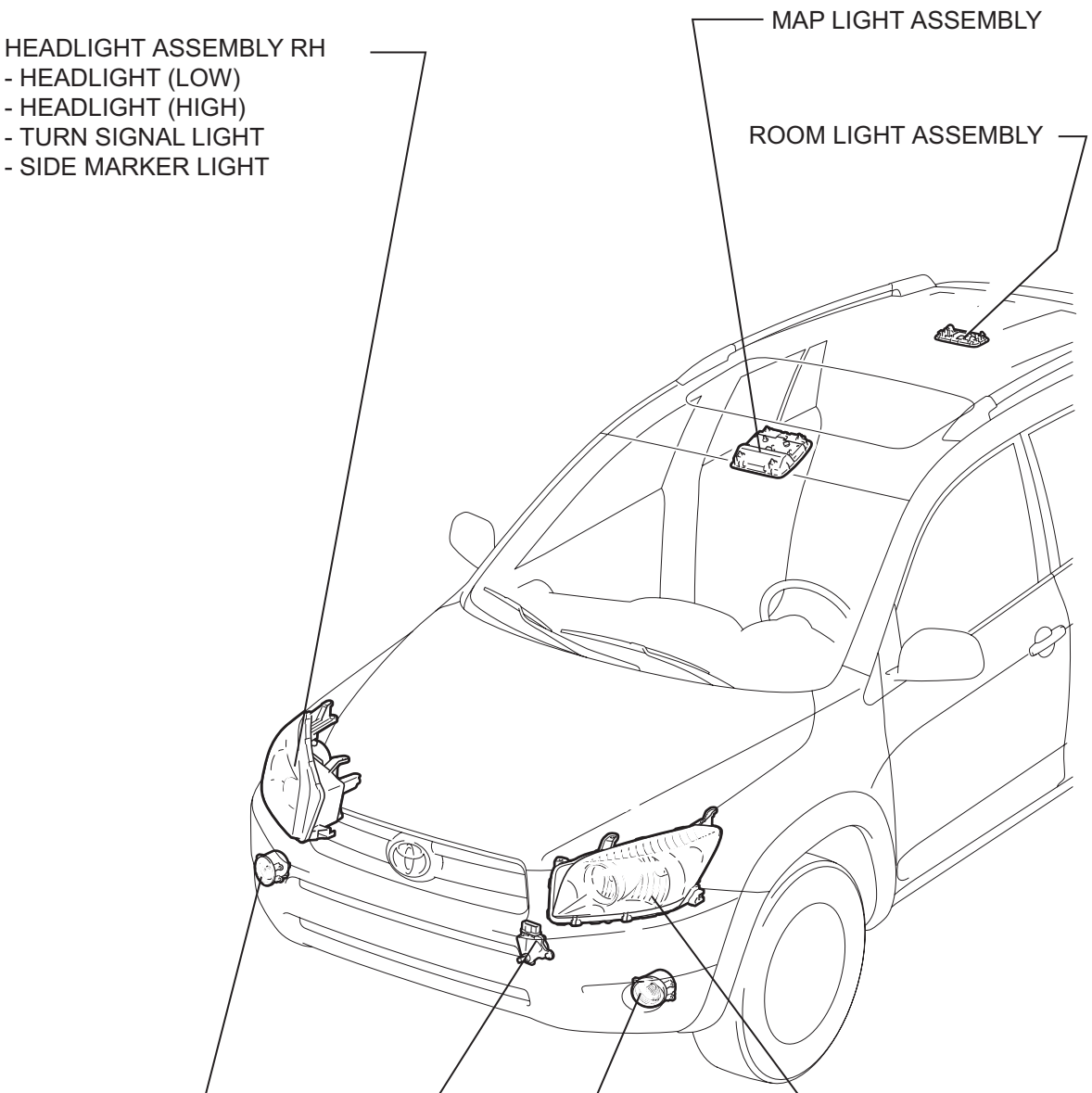
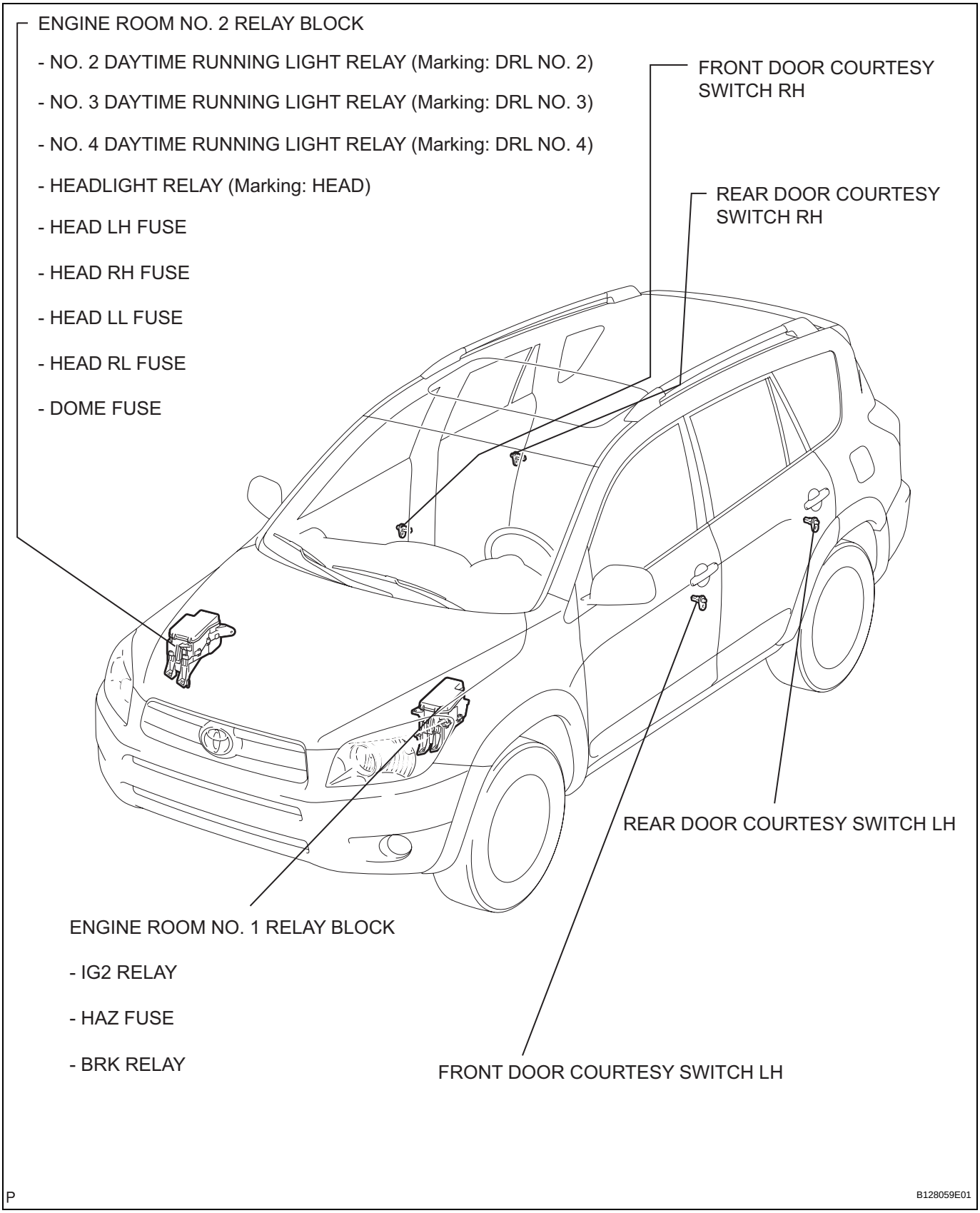
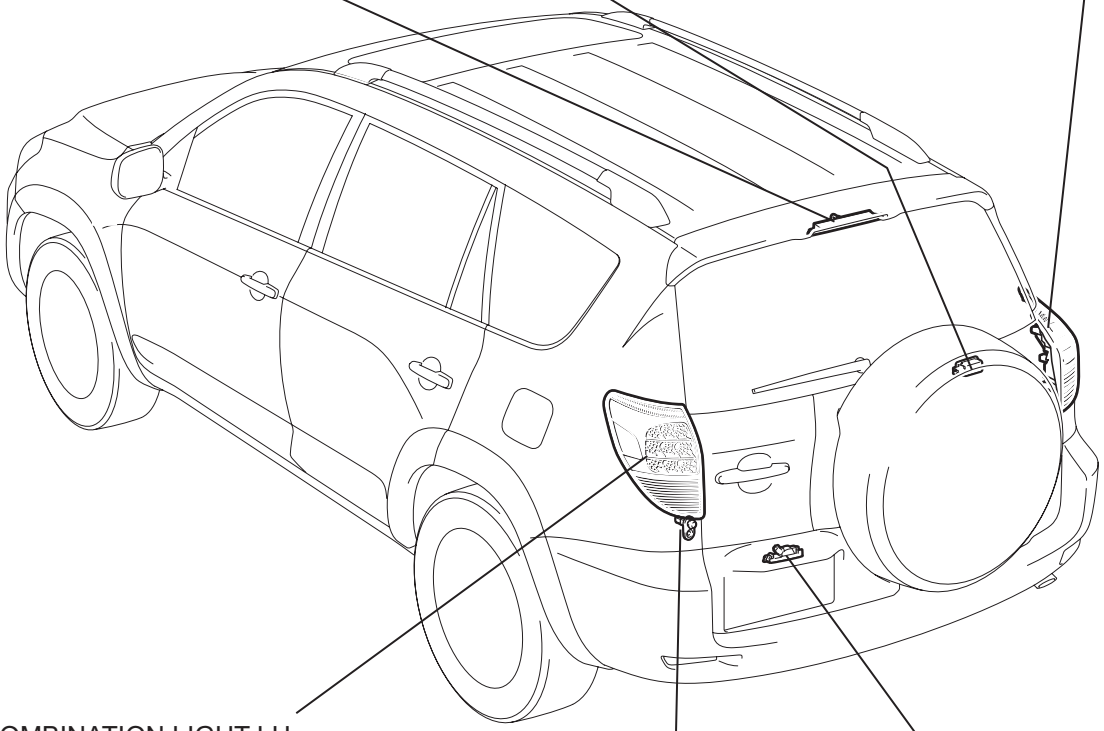
LIGHTING SYSTEM

PARTS LOCATION



B128055E01

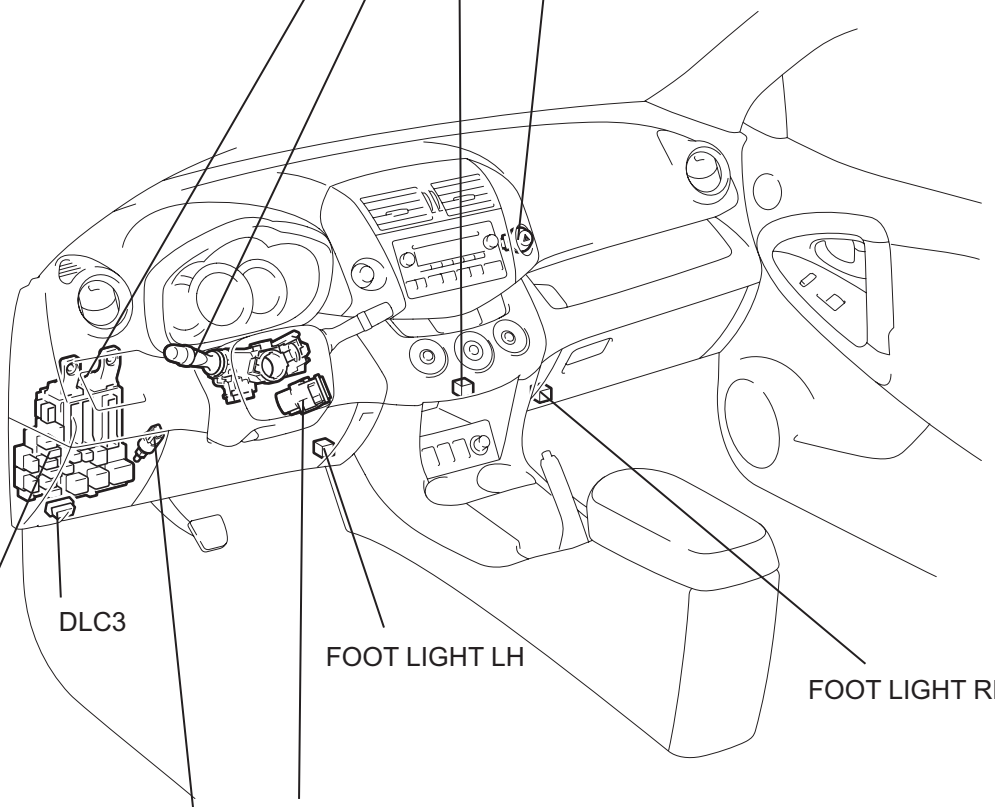

ENGINE ROOM NO. 2 RELAY BLOCK
- NO. 2 DAYTIME RUNNING LIGHT RELAY (Marking: DRL NO. 2)
- NO. 3 DAYTIME RUNNING LIGHT RELAY (Marking: DRL NO. 3)
- NO. 4 DAYTIME RUNNING LIGHT RELAY (Marking: DRL NO. 4)
- HEADLIGHT RELAY (Marking: HEAD)
- HEAD LH FUSE
- HEAD RH FUSE
- HEAD LL FUSE
- HEAD RL FUSE
- DOME FUSE
FRONT DOOR COURTESY SWITCH RH
REAR DOOR COURTESY SWITCH RH
REAR DOOR COURTESY SWITCH LH
ENGINE ROOM NO. 1 RELAY BLOCK
- IG2 RELAY
- HAZ FUSE
- BRK RELAY
FRONT DOOR COURTESY SWITCH LH
P
B128059E01



P

B128086E04

LI



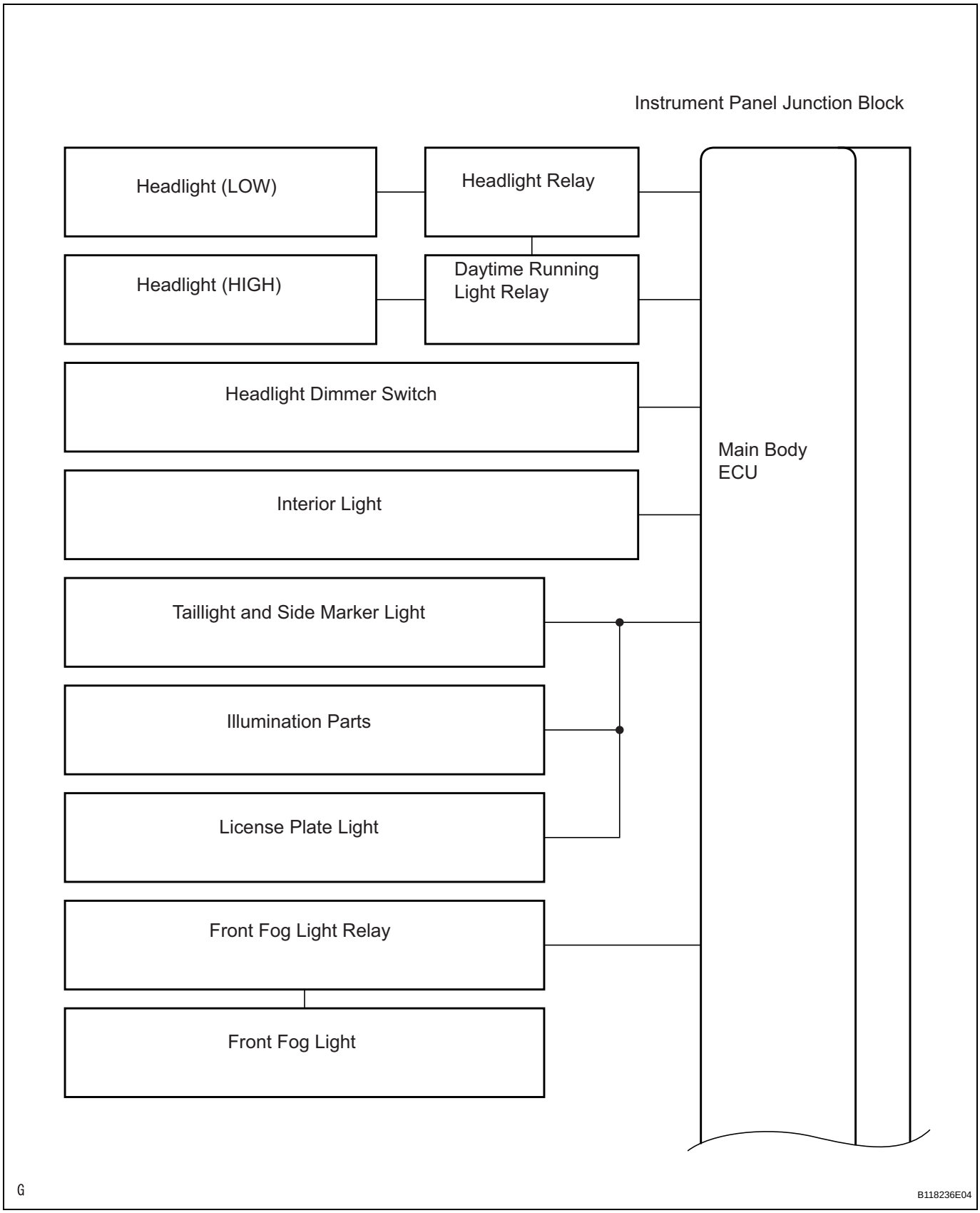
*1: w/o Engine Immobiliser System
*2: w/ Engine Immobiliser System

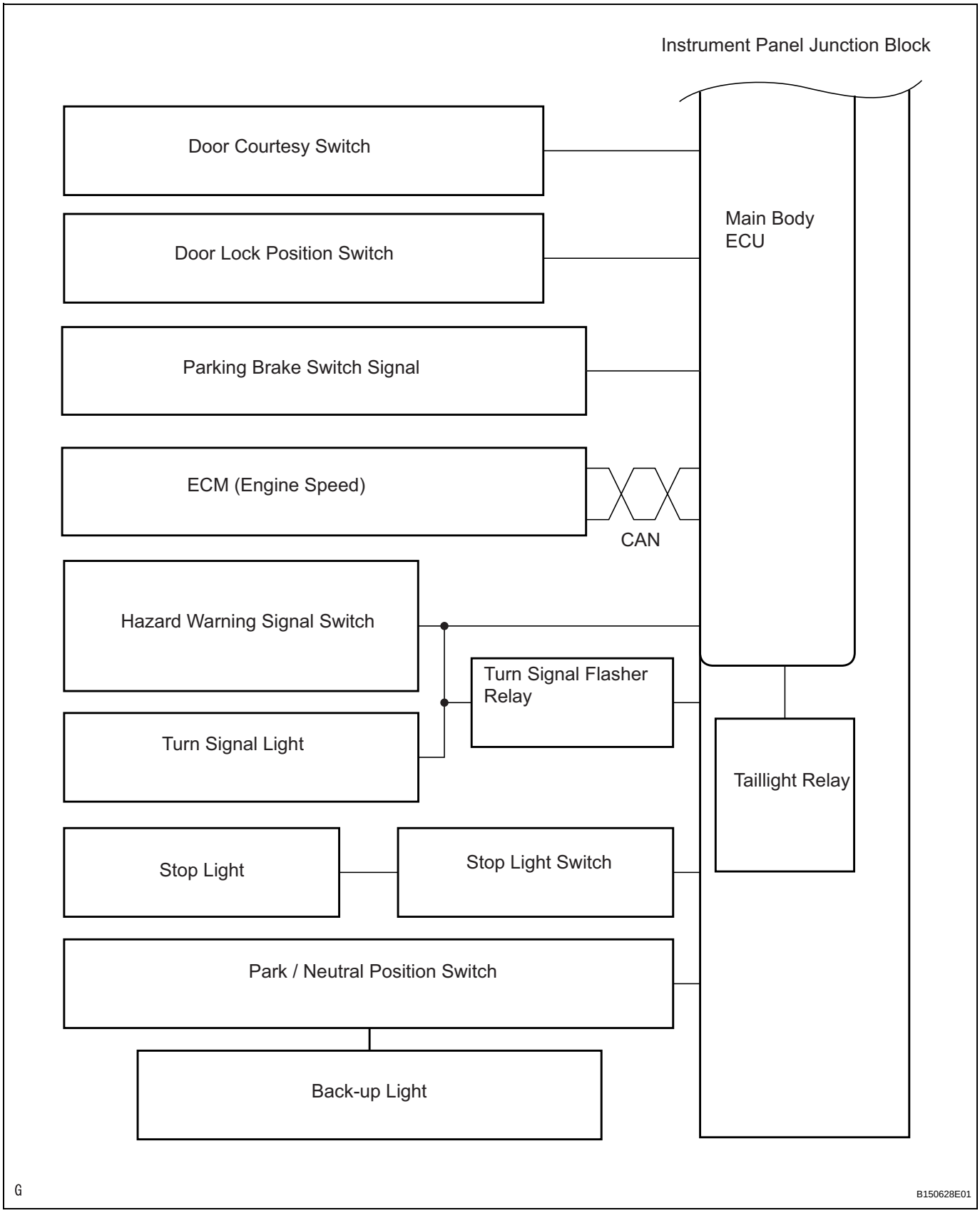
LI

P

B128056E01

SYSTEM DIAGRAM




Instrument Panel Junction Block
Door Courtesy Switch
Door Lock Position Switch
Parking Brake Switch Signal
ECM (Engine Speed)
CAN
Main Body ECU
Hazard Warning Signal Switch
Turn Signal Flasher Relay
Turn Signal Light
Taillight Relay
Stop Light
Stop Light Switch
Park / Neutral Position Switch
Back-up Light
G
B150628E01

SYSTEM DESCRIPTION

1. LIGHTING SYSTEM

(a) Illumination control system (Illuminated entry system):

When the doors are unlocked by a key or transmitter operation, or when a door is opened or closed, the illuminated entry system turns on the room light, map light, foot light and ignition key cylinder light*1 or transponder key amplifier*2.

(1) The main body ECU receives the following signals (A).
- Door courtesy switch signal
- Door detection switch signal
- Ignition switch signal

(2) The main body ECU controls the following signal based on the signals listed in A.
- Illumination operation signal

(3) The main body ECU controls the on/off and fade-in/fade-out operation of the following parts.
- Room light
- Map light
- Foot light
- Ignition key cylinder light*1 or transponder key amplifier*2

HINT:
*1: w/o Engine immobiliser system
*2: w/ Engine immobiliser system

(b) Battery saver system:

When the ignition switch is turned off and any of the doors is open continuously for 20 minutes, the main body ECU turns the illumination operation signal off. As a result, the room light, map light, foot light and ignition key cylinder lights*1 or transponder key amplifier*2 turn off.

HINT:
*1: w/o Engine immobiliser system
*2: w/ Engine immobiliser system

(1) The main body ECU receives the following signals (B).
- Door courtesy switch signal
- Ignition switch signal

(2) The main body ECU controls the following signal based on the signals listed in B (C).
- Illumination operation signal

(3) The main body ECU controls the illumination period of the following parts based on the signals listed in C.
- Room light
- Map light
- Foot light
- Ignition key cylinder light*1 or transponder key amplifier*2

HINT:
*1: w/o Engine immobiliser system

*2: w/ Engine immobiliser system

(c) Manual light control system:
This system functions when lights such as the headlights and taillights are illuminated by manual operation of the light control switch.
(1) The main body ECU receives the following signals (D).
- Light control switch signal
- Headlight dimmer switch signal
- Front fog light switch signal

(2) The main body ECU controls the following signals based on the signals listed in D (E).
- Headlight relay operation signal
- Taillight relay operation signal
- Daytime running light No. 2 relay operation signal
- Daytime running light No. 3 relay operation signal
- Daytime running light No. 4 relay operation signal
- Front fog light relay operation signal

(3) The main body ECU controls the on/off operation of the following parts based on the signals listed in E.
- Headlight (LOW)
- Headlight (HIGH)
- Side marker light (front and rear)
- Front fog light

(d) Light auto turn off system:
When the headlights and taillights are illuminated by the operation of the light control switch, if the ignition switch is turned OFF, this system continues illuminating the headlights and taillights for approximately 30 seconds, and then turns off the lights. However, when all the doors are locked manually, using the door lock button, using the key or pressing LOCK on the transmitter turns the headlights and taillights off immediately.
(1) The main body ECU receives the following signals (F).
- Door courtesy switch signal
- Ignition switch signal

(2) The main body ECU controls the following signals based on the signals listed in F (G).
- Headlight relay operation signal
- Taillight relay operation signal
- Daytime running light No. 2 relay operation signal
- Daytime running light No. 3 relay operation signal
- Daytime running light No. 4 relay operation signal
- Front fog light relay operation signal

(3) The main body ECU controls the illumination period of the following parts based on the signals listed in G.
- Headlight (LOW)
- Headlight (HIGH)
- Side marker light (front and rear)
- Front fog light

(e) Daytime running light system:
This system is directly connected to the high-beam headlights and is designed to automatically activate the daytime running lights in order to increase the visibility of the vehicle.

(1) The main body ECU receives the following (H).
- Ignition switch signal
- Engine speed
- Parking brake switch signal
- Light control switch signal

(2) The main body ECU controls the following signal based on the signals listed in H (I).
- Daytime running light No. 2 relay operation signal

(3) The main body ECU controls the on/off operation of the following part based on the signal listed in I.
- Headlight (HIGH)

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use these procedures to troubleshoot the lighting system.
- *: Use the intelligent tester.

1 **VEHICLE BROUGHT TO WORKSHOP**

NEXT

2 **INSPECT BATTERY VOLTAGE**

Standard voltage:
11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding.

NEXT

3 **REFER TO PROBLEM SYMPTOMS TABLE**

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B → **Go to step 5**

A

4 **OVERALL ANALYSIS AND TROUBLESHOOTING***

(a) DATA LIST / ACTIVE TEST (See page LI-22)
(b) Terminals of ECU (See page LI-19)

NEXT

5 **ADJUST, REPAIR OR REPLACE**

NEXT

6 **CONFIRMATION TEST**

NEXT

END

OPERATION CHECK

1. ILLUMINATED ENTRY SYSTEM OPERATION CHECK

(a) The illuminated entry system controls the following lights:
- Ignition key cylinder light*1 or transponder key amplifier*2
- Foot light
- Map light and room light

HINT:
*1: w/o Engine immobiliser system
*2: w/ Engine immobiliser system

(b) Check that the lights come on when unlocking any of the doors that are closed and locked with the ignition switch OFF. Then check that the lights fade out under the following conditions:
(1) Leave the doors unlocked for 15 seconds.
(2) Turn the ignition switch ACC or ON.
(3) Lock all the doors.

(c) Check that the lights stay on for at least 15 seconds after opening any of the doors before fading out. Then check that the lights fade out 15 seconds after closing all the doors.

(d) Check that the lights stay lit after turning the ignition switch OFF with all the doors closed and the ignition switch in the ACC or ON position. Then check that the lights fade out under the following conditions:
(1) Leave the doors unlocked for 15 seconds.
(2) Turn the ignition switch ACC or ON.
(3) Lock all the doors.

(e) Check that the lights stay on for at least 15 seconds after opening any of the doors. Then check that the lights fade out 15 seconds after closing all the doors.

(f) Check that the lights come on when opening any of the doors and fade out when closing and locking all the doors or turning the ignition switch to the ACC or ON position.

2. FOOT LIGHT OPERATION CHECK

(a) Check that the lights come on when unlocking any of the doors that are closed and locked with the ignition switch OFF. Then check that the lights fade out under the following conditions:
(1) Leave the doors unlocked for 15 seconds.
(2) Lock all the closed doors and turn the ignition switch OFF.

(b) Check that the lights stay on for at least 15 seconds under the following conditions before going off.
(1) Turn the ignition switch to the ON position, and move the shift lever to the P position.
(2) Open any of the doors.

(c) Check that the lights dim before going off when turning the ignition switch ON and shifting the shift lever into any position other than P.

(d) Check the conditions below before the lights go off.
(1) The lights dim when shifting the shift lever into a position other than P and closing all the doors with the ignition switch ON.
(2) The lights come on for 15 seconds and fade out when shifting the shift lever into the P position and closing all the doors with the ignition switch OFF.
(e) Check that the lights come on after opening any of the doors.
(f) Check that the lights fade out 15 seconds after closing all the doors, or locking all the doors.
(g) Check that the lights come on gradually with the ignition switch ON and the shift lever in the P position.
(h) Check that the lights dim when shifting the shift lever from P into another position with all the doors closed.
(i) Check that the lights stay dimmed with the ignition switch ON and the shift lever in a position other than P.

3. BATTERY SAVER OPERATION CHECK

(a) Turn the ignition switch OFF and close all the doors.
(b) Open any door to turn the room light on, and leave it open. Check that the light goes off after about 20 minutes.
(c) After the room light goes off, close the driver's door.
(d) Open any door to turn the room light on, and then open another door. Check that the room light goes off within 20 minutes after opening the doors.
(e) Close all the doors. Open any door to turn the room light on. Check that the room light goes off within 20 minutes.

4. LIGHT AUTO TURN OFF OPERATION CHECK

(a) Turn the ignition switch ON, and turn the light control switch to the TAIL or HEAD position.
(b) Turn the ignition switch OFF and open the driver's door, and check that the headlights go off after about 30 seconds.
(c) Turn the ignition switch to the ON position, and turn the light control switch to the TAIL or HEAD position.
(d) Turn the ignition switch OFF and open the driver's door. Before the headlight goes off after about 30 seconds, lock all the doors and press the LOCK switch on the wireless transmitter. Check that the headlights go off immediately.

5. DAYTIME RUNNING LIGHT OPERATION CHECK

(a) Check that the headlights come on when the light control switch is off with the engine running and the parking brake released. Then check that the lights go off under the following conditions:
(1) Turn the light control switch to the TAIL or HEAD position.

(2) Turn the ignition switch OFF. Check that the headlights go off immediately.

CUSTOMIZE PARAMETERS

HINT:
The following items can be customized.
NOTICE:

- **When the customer requests a change in a function, first make sure that the function can be customized.**
- **Be sure to make a note of the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

Illuminated entry

Display (Item)	Default	Contents	Setting
LIGHTING TIME (Lighting Time)	15 seconds	Changes illumination duration after door closure. (It will quickly fade out in case of turning ignition switch ON.)	7.5/15/30 (seconds)
I/L ON /ACC OFF (Room light illuminates when ignition switch turned OFF)	ON	Illuminates light when ignition switch turned to ACC. (Room light illuminated when interior light switch in DOOR position)	ON/OFF
I/L ON / UNLOCK (Room light illuminates when door key unlocked.)	ON	Function to light up room light when unlocking with door key cylinder. (Room light illuminated when interior light switch in DOOR position)	ON/OFF
LIGHT CONTROL	ON	Function to light up foot light when ignition switch is ON and shift position is not P.	ON/OFF

Light control (USA)

Display (Item)	Default	Contents	Setting
DRL FUNCTION	ON	Daytime running light function ON or OFF.	ON/OFF

HINT:
Sensitivity adjustments are difficult to confirm. Check by driving the customer's vehicle.

PROBLEM SYMPTOMS TABLE

(2005/11-2006/01)
HINT:
Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Headlight and taillight system

Symptom	Suspected area	See page
"Low beam" does not comes on (One side).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. Bulb	LI-31
	3. Light control switch circuit	LI-62
	4. Headlight relay circuit	LI-28
	5. Instrument panel junction block	LI-19
"Low beam" does not come on (Both sides).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. Bulb	LI-31
	3. Light control switch circuit	LI-62
	4. Headlight relay circuit	LI-28
	5. Instrument panel junction block	LI-19
"High beam" does not come on (One side).	1. HEAD LH fuse, HEAD RH fuse	LI-41
	2. HEAD RL fuse	LI-31
	3. Bulb	LI-42
	4. Light control switch circuit	LI-62
	5. Headlight (Hi-beam) circuit	LI-37
	6. Instrument panel junction block	LI-19
"High beam" does not come on (Both sides).	1. HEAD LH fuse, HEAD RH fuse	LI-41
	2. HEAD RL fuse	LI-31
	3. Bulb	LI-42
	4. Light control switch circuit	LI-62
	5. Headlight (Hi-beam) circuit	LI-37
	6. Instrument panel junction block	LI-19
"Low beam" and "High beam" do not come on (One side).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. HEAD LH fuse, HEAD RH fuse	LI-41
	3. Bulb (high)	LI-42
	4. Bulb (low)	LI-31
	5. Light control switch circuit	LI-62
	6. Headlight relay circuit	LI-28
	7. Headlight (Hi-beam) circuit	LI-37
	8. Instrument panel junction block	LI-19
"Low beam" and "High beam" do not come on (Both sides).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. HEAD LH fuse, HEAD RH fuse	LI-41
	3. Bulb (high)	LI-42
	4. Bulb (low)	LI-31
	5. Light control switch circuit	LI-62
	6. Headlight relay circuit	LI-28
	7. Headlight (Hi-beam) circuit	LI-37
	8. Instrument panel junction block	LI-19
"Flash" does not come on (Low beam and Hi-beam are normal).	1. Light control switch circuit	LI-62
	2. Instrument panel junction block	LI-19

Symptom	Suspected area	See page
Headlight is dark.	1. Bulb	-
	2. Wire harness	-
Taillight does not come on (All).	1. TAIL fuse	LI-87
	2. Light control switch circuit	LI-62
	3. Taillight relay circuit	LI-83
	4. Instrument panel junction block	LI-19
Only one front side marker light comes on.	1. Bulb	LI-90
	2. Wire harness	LI-90
Only one taillight comes on.	1. Rear combination light	LI-107
	2. Wire harness	LI-91
Only one rear side marker light comes on.	1. Bulb	LI-92
	2. Wire harness	LI-92
Daytime running light system does not operate.	1. Light control switch circuit	LI-62
	2. CAN communication line	CA-58
	3. Parking brake switch circuit	PB-14
	4. Daytime running light relay circuit	LI-33
	5. Instrument panel junction block	LI-19

Light auto turn off system

Symptom	Suspected area	See page
Light auto turn off system does not operate.	1. Light control switch circuit	LI-62
	2. Ignition switch	ST-18
	3. Door courtesy switch circuit	LI-66
	4. Instrument panel junction block	LI-19

Fog light system

Symptom	Suspected area	See page
Front fog light does not come on with light control switch in TAIL or HEAD position.	1. FF FOG fuse	LI-48
	2. Front fog light relay	LI-49
	3. Light control switch circuit	LI-62
	4. Front fog light circuit	LI-45
	5. Instrument panel junction block	LI-19
Only one front fog light does not come on.	1. Bulb	LI-48
	2. Wire harness	LI-45

Turn signal and hazard warning system

Symptom	Suspected area	See page
"Hazard" and "Turn" do not come on.	1. HAZ fuse	LI-59
	2. ECU-IG2 fuse	LI-53
	3. Ignition switch	ST-18
	4. Turn signal flasher relay	LI-145
	5. Wire harness	-
Hazard warning light does not come on (Turn is normal).	1. Hazard warning switch	LI-60
	2. Wire harness	LI-56
Turn signal does not come on (Hazard is normal).	1. Headlight dimmer switch (turn signal switch)	LI-54
	2. Wire harness	LI-50
Turn signal does not come on in one direction.	1. Headlight dimmer switch (turn signal switch)	LI-54
	2. Wire harness	LI-50
Only one bulb does not come on.	1. Bulb	LI-56
	2. Wire harness	LI-50

Stop light system

Symptom	Suspected area	See page
Stop light does not operate (All).	1. STOP fuse	LI-26
	2. BRK relay	LI-151
	3. Stop light switch	BR-13
	4. Wire harness	LI-24
Only one stop light does not operate.	1. Rear combination light	LI-107
	2. Wire harness	LI-24

Illuminated entry system

Symptom	Suspected area	See page
Illuminated entry of multiplex network body ECU control does not operate (All).	1. Ignition switch	ST-18
	2. Door lock position circuit	LI-70
	3. Door courtesy switch circuit	LI-66
	4. Illumination circuit	LI-75
	5. Instrument panel junction block	LI-19

Foot light system

Symptom	Suspected area	See page
Step light of body ECU control does not operate.	1. Ignition switch	ST-18
	2. Door lock position switch	LI-70
	3. Door courtesy switch circuit	LI-66
	4. Footwell light circuit	LI-73
	5. Instrument panel junction block	LI-19

Others

Symptom	Suspected area	See page
Vanity light does not operate.	1. Bulb	LI-127
	2. Vanity light switch	LI-128
	3. Wire harness	-
Back-up light does not come on (All).	1. GAUGE1 fuse	LI-61
	2. Park / neutral position switch	AX-108
	3. Wire harness	LI-59
Back door courtesy light does not come on.	1. Bulb	LI-122
	2. DOME fuse	-
	3. Back door courtesy switch	LI-143
	4. Wire harness	-
Center console illumination does not come on.	1. Center console light	LI-130
	2. Wire harness	-

PROBLEM SYMPTOMS TABLE

(2006/01-)
HINT:
Use the table below to help determine the cause of the problem symptom. The potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Headlight and taillight system

Symptom	Suspected Area	See page
"Low beam" does not comes on (One side).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. Bulb	LI-31
	3. Light control switch circuit	LI-62
	4. Headlight relay circuit	LI-28
	5. Instrument panel junction block	LI-19
"Low beam" does not come on (Both sides).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. Bulb	LI-31
	3. Light control switch circuit	LI-62
	4. Headlight relay circuit	LI-28
	5. Instrument panel junction block	LI-19
"High beam" does not come on (One side).	1. HEAD LH fuse, HEAD RH fuse	LI-41
	2. HEAD RL fuse	LI-31
	3. Bulb	LI-42
	4. Light control switch circuit	LI-62
	5. Headlight (Hi-beam) circuit	LI-37
	6. Instrument panel junction block	LI-19
"High beam" does not come on (Both sides).	1. HEAD LH fuse, HEAD RH fuse	LI-41
	2. HEAD RL fuse	LI-31
	3. Bulb	LI-42
	4. Light control switch circuit	LI-62
	5. Headlight (Hi-beam) circuit	LI-37
	6. Instrument panel junction block	LI-19
"Low beam" and "High beam" do not come on (One side).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. HEAD LH fuse, HEAD RH fuse	LI-41
	3. Bulb (high)	LI-42
	4. Bulb (low)	LI-31
	5. Light control switch circuit	LI-62
	6. Headlight relay circuit	LI-28
	7. Headlight (Hi-beam) circuit	LI-37
	8. Instrument panel junction block	LI-19
"Low beam" and "High beam" do not come on (Both sides).	1. HEAD LL fuse, HEAD RL fuse	LI-31
	2. HEAD LH fuse, HEAD RH fuse	LI-41
	3. Bulb (high)	LI-42
	4. Bulb (low)	LI-31
	5. Light control switch circuit	LI-62
	6. Headlight relay circuit	LI-28
	7. Headlight (Hi-beam) circuit	LI-37
	8. Instrument panel junction block	LI-19
"Flash" does not come on (Low beam and Hi-beam are normal).	1. Light control switch circuit	LI-62
	2. Instrument panel junction block	LI-19

Symptom	Suspected Area	See page
Headlight is dark.	1. Bulb	-
	2. Wire harness	-
Taillight does not come on (All).	1. TAIL fuse	LI-87
	2. Light control switch circuit	LI-62
	3. Taillight relay circuit	LI-83
	4. Instrument panel junction block	LI-19
Only one front side marker light comes on.	1. Bulb	LI-90
	2. Wire harness	LI-90
Only one taillight comes on.	1. Rear combination light	LI-107
	2. Wire harness	LI-91
Only one rear side marker light comes on.	1. Bulb	LI-92
	2. Wire harness	LI-92
Daytime running light system does not operate.	1. Light control switch circuit	LI-62
	2. CAN communication line	CA-60
	3. Parking brake switch circuit	PB-14
	4. Daytime running light relay circuit	LI-33
	5. Instrument panel junction block	LI-19

Light auto turn off system

Symptom	Suspected Area	See page
Light auto turn off system does not operate.	1. Light control switch circuit	LI-62
	2. Ignition switch	ST-18
	3. Door courtesy switch circuit	LI-66
	4. Instrument panel junction block	LI-19

Fog light system

Symptom	Suspected Area	See page
Front fog light does not come on with light control switch in TAIL or HEAD position.	1. FF FOG fuse	LI-48
	2. Front fog light relay	LI-49
	3. Light control switch circuit	LI-62
	4. Front fog light circuit	LI-45
	5. Instrument panel junction block	LI-19
Only one front fog light does not come on.	1. Bulb	LI-48
	2. Wire harness	LI-45

Turn signal and hazard warning system

Symptom	Suspected Area	See page
"Hazard" and "Turn" do not come on.	1. HAZ fuse	LI-59
	2. ECU-IG2 fuse	LI-53
	3. Ignition switch	ST-18
	4. Turn signal flasher relay	LI-145
	5. Wire harness	-
Hazard warning light does not come on (Turn is normal).	1. Hazard warning switch	LI-60
	2. Wire harness	LI-56
Turn signal does not come on (Hazard is normal).	1. Headlight dimmer switch (turn signal switch)	LI-54
	2. Wire harness	LI-50
Turn signal does not come on in one direction.	1. Headlight dimmer switch (turn signal switch)	LI-54
	2. Wire harness	LI-50
Only one bulb does not come on.	1. Bulb	LI-56
	2. Wire harness	LI-50

Stop light system

Symptom	Suspected Area	See page
Stop light does not operate (All).	1. STOP fuse	LI-26
	2. BRK relay	LI-151
	3. Stop light switch	BR-13
	4. Wire harness	LI-24
Only one stop light does not operate.	1. Rear combination light	LI-107
	2. Wire harness	LI-24

Illuminated entry system

Symptom	Suspected Area	See page
Illuminated entry of multiplex network body ECU control does not operate (All).	1. Ignition switch	ST-18
	2. Door lock position circuit	LI-70
	3. Door courtesy switch circuit	LI-66
	4. Illumination circuit	LI-75
	5. Instrument panel junction block	LI-19

Foot light system

Symptom	Suspected Area	See page
Step light of body ECU control does not operate.	1. Ignition switch	ST-18
	2. Door lock position switch	LI-70
	3. Door courtesy switch circuit	LI-66
	4. Footwell light circuit	LI-73
	5. Instrument panel junction block	LI-19

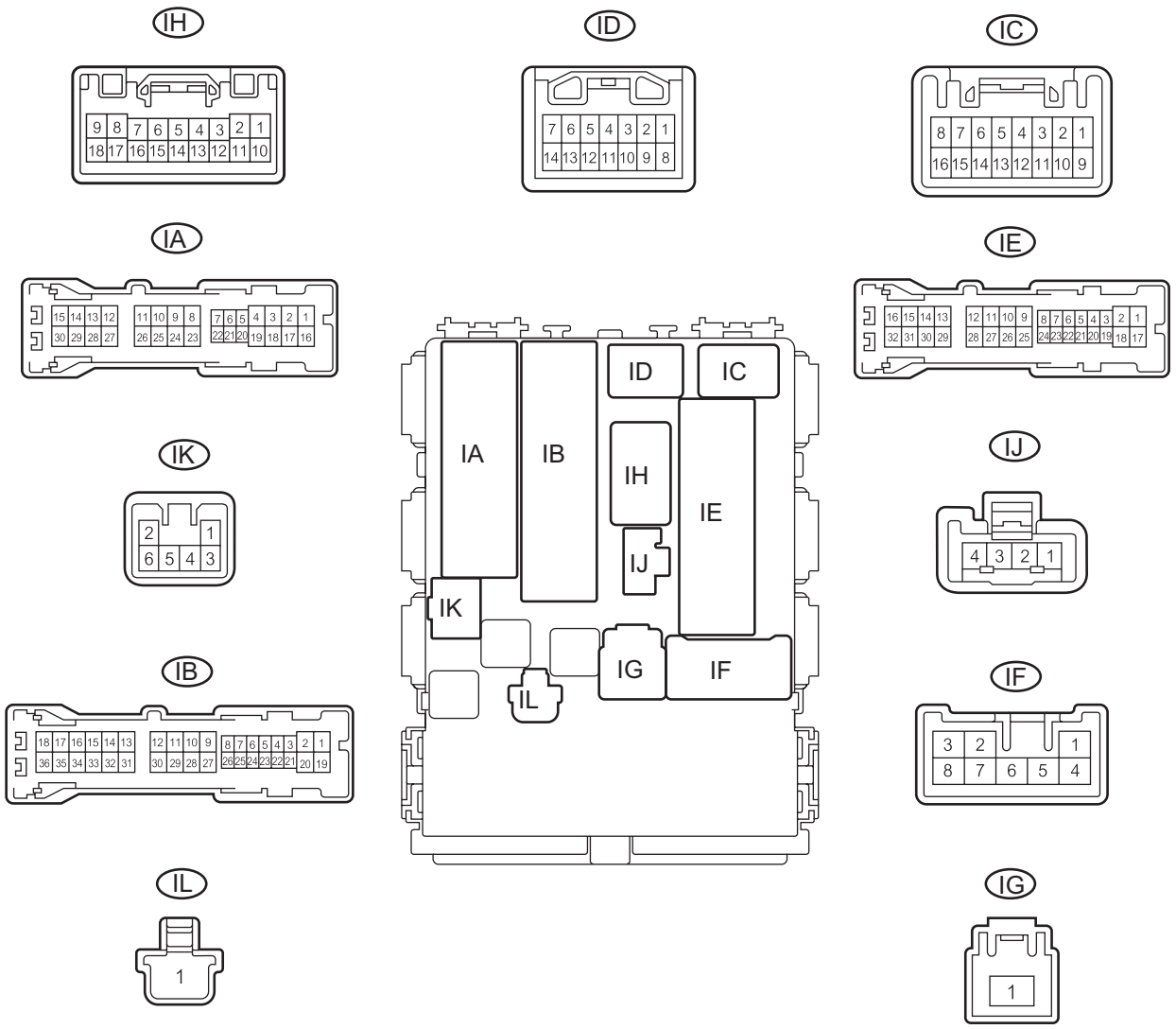
Others

Symptom	Suspected Area	See page
Vanity light does not operate.	1. Bulb	LI-127
	2. Vanity light switch	LI-128
	3. Wire harness	-
Back-up light does not come on (All).	1. GAUGE1 fuse	LI-61
	2. Park / neutral position switch	AX-108
	3. Wire harness	LI-59
Back door courtesy light does not come on.	1. Bulb	LI-122
	2. DOME fuse	-
	3. Back door courtesy switch	LI-143
	4. Wire harness	-
Center console illumination does not come on.	1. Center console light	LI-130
	2. Wire harness	-

TERMINALS OF ECU

1. CHECK INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

Instrument Panel Junction Block (Front View)

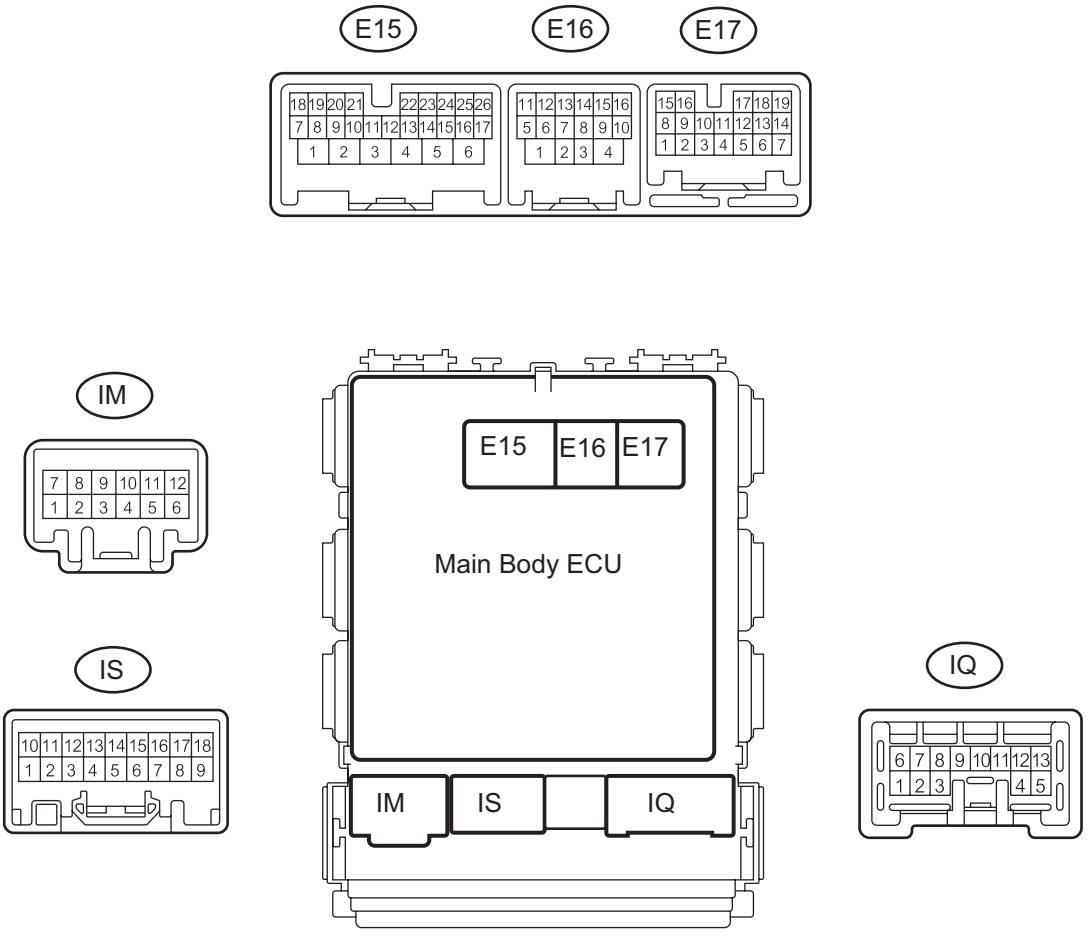


H

E114510E26

LI

Instrument Panel Junction Block (Rear View)

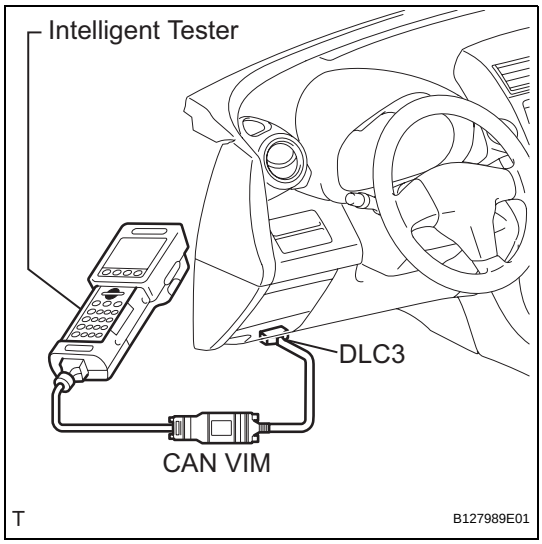


(a) Measure the voltage of the connectors.

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
HRLY (E15-20) - GND1 (IE-17)	BR - W-B	Headlight Relay (HEAD signal)	Light control switch is OFF or TAIL	10 to 14 V
HRLY (E15-20) - GND1 (IE-17)	BR - W-B	Headlight Relay (HEAD signal)	Light control switch is HEAD	Below 1 V
DIM (E16-3) - GND1 (IE-17)	LG - W-B	Daytime running light Relay (High beam signal)	Light control switch is HEAD	Below 1 V
DIM (E16-3) - GND1 (IE-17)	LG - W-B	Daytime running light Relay (High beam signal)	Light control switch is HEAD	10 to 14 V
TAIL (E15-21) - GND1 (IE-17)	W - W-B	Taillight relay (TAIL signal)	Light control switch is OFF	Below 1 V
TAIL (E15-21) - GND1 (IE-17)	W - W-B	Taillight relay (TAIL signal)	Light control switch is TAIL	10 to 14 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ILE (IK-2) - GND1 (IE-17)	W - W-B	Illumination signal	• Room light switch position is DOOR • Door closed	10 to 14 V
ILE (IK-2) - GND1 (IE-17)	W - W-B	Illumination signal	• Room light switch position is DOOR • Door open	Below 1 V
FSPT (E15-2) - GND1 (IE-17)	V - W-B	Foot light illumination (Illumination signal)	Foot light illumination OFF	10 to 14 V
FSPT (E15-2) - GND1 (IE-17)	V - W-B	Foot light illumination (Illumination signal)	Foot light illumination ON	Below 1 V
HU (IJ-4) - GND1 (IE-17)	O - W-B	Headlight dimmer switch (HIGH signal)	Light control switch is HEAD Headlight dimmer switch is LOW	10 to 14 V
HU (IJ-4) - GND1 (IE-17)	O - W-B	Headlight dimmer switch (HIGH signal)	Light control switch is HEAD Headlight dimmer switch is HIGH	Below 1 V
LCTY (E15-8) - GND1 (IE-17)	SB - W-B	Courtesy switch (Rear left door circuit)	Rear left door is closed	Below 1 V
LCTY (E15-8) - GND1 (IE-17)	SB - W-B	Courtesy switch (Rear left door circuit)	Rear left door is open	10 to 14 V
FFGO (E17-17) - GND1 (IE-17)	G - W-B	Front fog relay (Front fog circuit)	Front fog light is OFF	10 to 14 V
FFGO (E17-17) - GND1 (IE-17)	G - W-B	Front fog relay (Front fog circuit)	Front fog light is ON	Below 1 V
DCTY (IA-21) - GND1 (IE-17)	W - W-B	Courtesy switch (Front left door circuit)	Front left door is open	Below 1 V
DCTY (IA-21) - GND1 (IE-17)	W - W-B	Courtesy switch (Front left door circuit)	Front left door is closed	10 to 14 V
RRCY (ID-7) - GND1 (IE-17)	LG - W-B	Courtesy switch (Rear right door circuit)	Rear right door is open	Below 1 V
RRCY (ID-7) - GND1 (IE-17)	LG - W-B	Courtesy switch (Rear right door circuit)	Rear right door is closed	10 to 14 V
HF (E15-22) - GND1 (IE-17)	R - W-B	Headlight dimmer switch (FLASH signal)	Headlight dimmer switch is OFF	10 to 14 V
HF (E15-22) - GND1 (IE-17)	R - W-B	Headlight dimmer switch (FLASH signal)	Headlight dimmer switch is FLASH	Below 1 V
FFOG (E17-13) - GND1 (IE-17)	GR - W-B	Front fog light switch (Front fog light signal)	Light control switch is TAIL Fog light switch is OFF	10 to 14 V
FFOG (E17-13) - GND1 (IE-17)	GR - W-B	Front fog light switch (Front fog light signal)	Light control switch is TAIL Fog light switch is ON	Below 1 V
PCTY (IC-14) - GND1 (IE-17)	BR - W-B	Courtesy switch (Front right door circuit)	Front right door is open	Below 1 V
PCTY (IC-14) - GND1 (IE-17)	BR - W-B	Courtesy switch (Front right door circuit)	Front right door is closed	10 to 14 V
BCTY (IA-7) - GND1 (IE-17)	LG - W-B	Courtesy switch (Back door)	Back door is open	Below 1 V
BCTY (IA-7) - GND1 (IE-17)	LG - W-B	Courtesy switch (Back door)	Back door is closed	10 to 14 V
LSWP (E15-10) - GND1 (IE-17)	Y - W-B	Door lock position switch (Front right door)	Front right door is in unlock position	10 to 14 V
LSWP (E15-10) - GND1 (IE-17)	Y - W-B	Door lock position switch (Front right door)	Front right door is in lock position	Below 1 V
LSWD (E15-25) - GND1 (IE-17)	Y - W-B	Door lock position switch (Front left door)	Front left door is in unlock position	10 to 14 V
LSWD (E15-25) - GND1 (IE-17)	Y - W-B	Door lock position switch (Front left door)	Front left door is in lock position	Below 1 V

If the result is not as specified, the junction block (main body ECU) may have a malfunction.



DATA LIST / ACTIVE TEST

1. READ DATA LIST

HINT:

Using the intelligent tester's DATA LIST allows switch, sensor, actuator and other item values to be read without removing any parts. Reading the DATA LIST early in troubleshooting is one way to save time.

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

(b) Turn the ignition switch ON.

(c) Read the DATA LIST according to the display on the tester.

Main body ECU

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
ACC SW	ACC switch signal / ON or OFF	ON: Ignition switch is in ACC, ON or START position OFF: Ignition switch is in OFF position	-
IG SW	IG switch signal / ON or OFF	ON: Ignition switch is in ON or START position OFF: Ignition switch is in OFF or ACC position	-
D DOR CTY SW	Driver's door courtesy switch signal / ON or OFF	ON: Driver's door is open OFF: Driver's door is closed	-
D LOCK POS SW	Driver's door lock position switch signal / ON or OFF	ON: Door lock is in unlock position OFF: Door lock is in lock position	-
P DOR CYT SW	Passenger's door courtesy switch signal / ON or OFF	ON: Front passenger's door is open OFF: Front passenger's door is closed	-
P LOCK POS SW	Front passenger's door lock position switch signal / ON or OFF	ON: Front passenger's door lock is in unlock position OFF: Front passenger's door lock is in lock position	-
RR DOR CTY SW	Rear door RH courtesy switch signal / ON or OFF	ON: Right rear door is open OFF: Right rear door is closed	-
DIMMER SW	Headlight dimmer switch signal / ON or OFF	ON: Headlight dimmer switch is in HI or FLASH position OFF: Headlight dimmer switch is in LO position	-
HIGH FLASHER SW	Headlight dimmer switch signal / ON or OFF	ON: Headlight dimmer switch is in FLASH position OFF: Headlight dimmer switch is in except FLASH position	-
F FOG LIGHT SW	Front fog light switch signal / ON or OFF	ON: Front fog light switch is ON position OFF: Front fog light switch is OFF position	-
HEAD LIGHT SW	Headlight control switch signal / ON or OFF	ON: Light control switch is in HEAD position OFF: Light control switch is in except HEAD position	-

Item	Measurement Item/ Display (Range)	Normal Condition	Diagnostic Note
TAIL LIGHT SW	Taillight switch signal / ON or OFF	ON: Light control switch is in TAIL or HEAD position OFF: Light control switch is in OFF position	-
RL DOR CTY SW	Rear door LH courtesy switch signal / ON or OFF	ON: Left rear door is open OFF Left rear door is closed	-
BK DOR CTY SW	Back door courtesy switch signal / ON or OFF	ON: Back door is open OFF: Back door is closed	-

2. PERFORM ACTIVE TEST

HINT:

Performing the intelligent tester's ACTIVE TEST allows relay, VSV, actuator and other items to be operated without removing any parts. Performing the ACTIVE TEST early in troubleshooting is one way to save time. The DATA LIST can be displayed during the ACTIVE TEST.

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

(b) Turn the ignition switch ON.

(c) Perform the ACTIVE TEST by following the directions on the tester screen.

Main body ECU

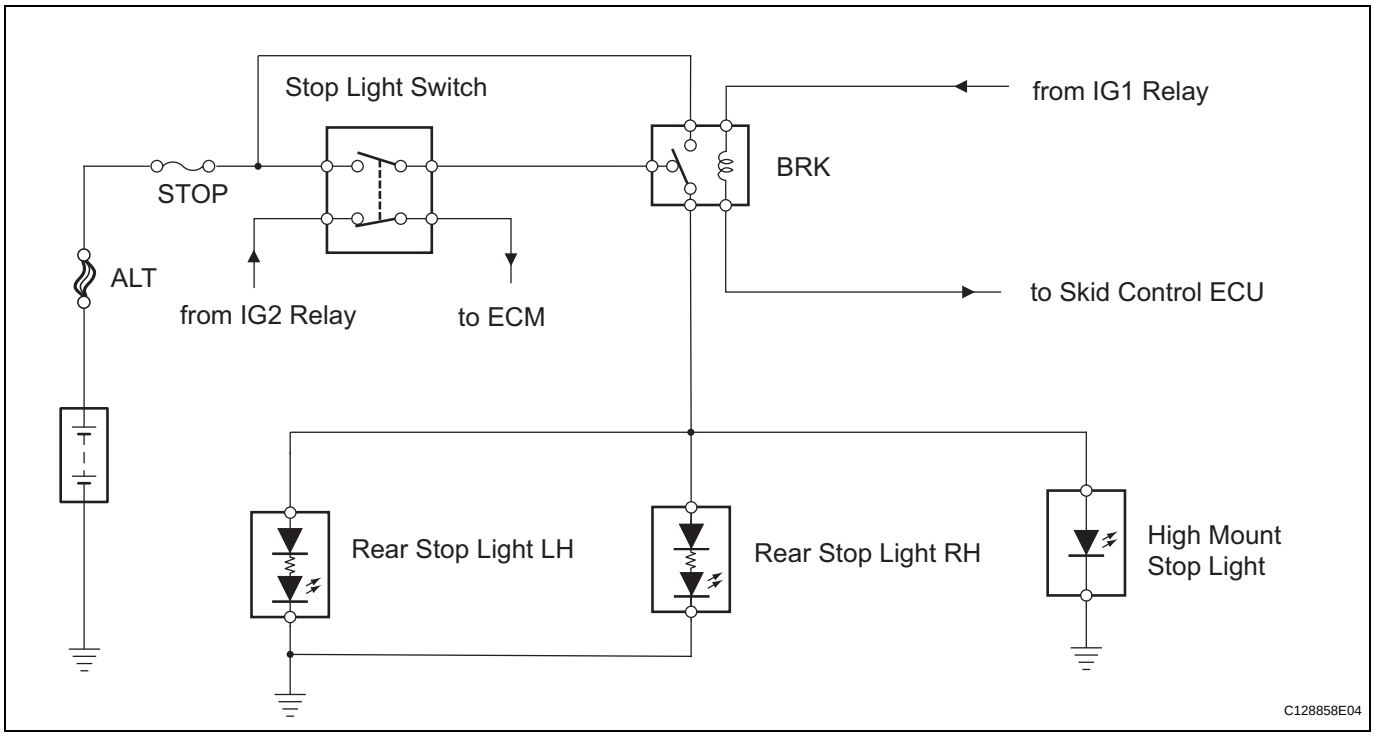
Item	Test Details	Diagnostic Note
HAZARD	Turn hazard light flasher relay ON / OFF	-
F FOG LIGHT RLY	Turn front fog light relay ON / OFF	-
HEAD LIGHT	Turn headlight relay ON / OFF	-
HEAD LIGHT (HI)	Turn headlight dimmer relay (Headlight dimmer switch HI position) ON / OFF	-
TAIL LIGHT	Turn taillight relay ON / OFF	-
ILLUMI OUTPUT	Test Details: Turn interior light and key illumination ON / OFF Vehicle Condition: Interior light switch is in DOOR position and all doors are closed	-
STEP LIGHT	Foot light illumination ON / OFF	-

Stop Light Switch Circuit

DESCRIPTION

When the stop light switch is turned on, current flows to the stop lights to illuminate them.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT FUSE (STOP)

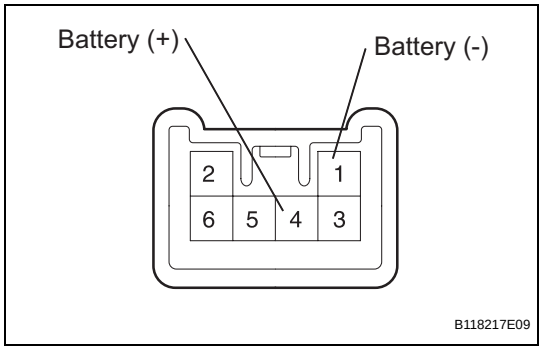
(a) Remove the STOP fuse from the instrument panel junction block.
(b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

LI

2 INSPECT STOP LIGHT (REAR COMBINATION LIGHT)

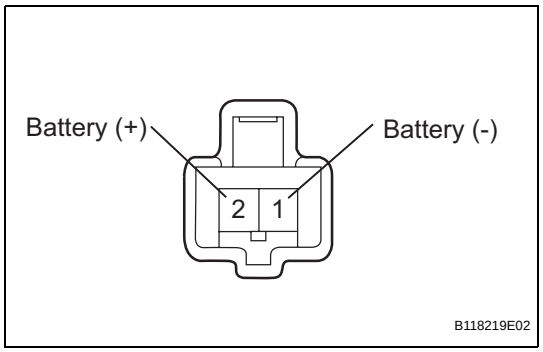


(a) Remove the rear combination light.
(b) Connect the positive (+) lead from the battery to terminal 4 and the negative (-) lead to terminal 1, then check that the light comes on.
OK:
Light comes on.

NG → **REPLACE REAR COMBINATION LIGHT**

OK

3 INSPECT REAR STOP LIGHT (HIGH MOUNT STOP LIGHT)

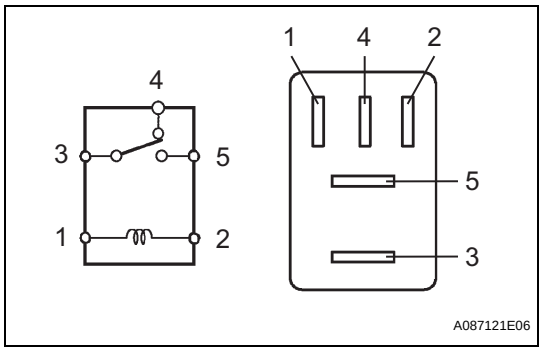


(a) Remove the high mount stop light assembly.
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the light comes on.
OK:
Light comes on

NG → **REPLACE HIGH MOUNT STOP LIGHT ASSEMBLY**

OK

4 INSPECT BRK RELAY



(a) Remove the BRK relay from the engine room No. 1 relay block.
(b) Measure the resistance of the relay.
Standard resistance

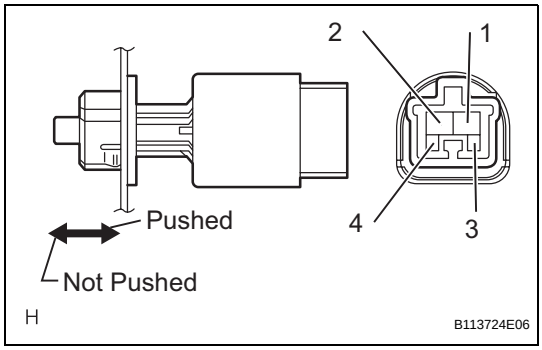
Tester Connection	Specified Condition
3 - 4	Below 1 Ω
3 - 4	10 kΩ or higher (Battery voltage applied to terminals 1 and 2)
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (Battery voltage applied to terminals 1 and 2)

NG → **REPLACE BRK RELAY**

OK

LI

5 INSPECT STOP LIGHT SWITCH



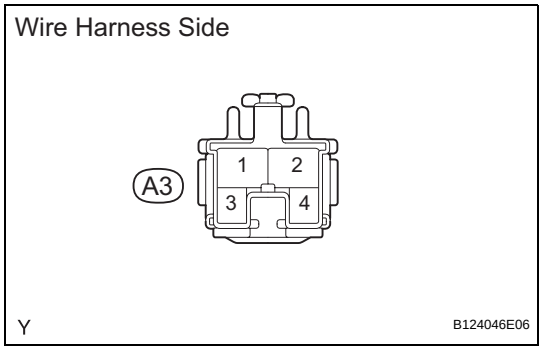
(a) Remove the stop light switch.
(b) Measure the resistance of the switch.
Standard resistance

Tester Connection	Condition	Specified Condition
1 - 2	Switch pin not pushed	Below 1 Ω
3 - 4	Switch pin pushed	10 kΩ or higher
1 - 2	Switch pin pushed	10 kΩ or higher
3 - 4	Switch pin not pushed	Below 1 Ω

NG → **REPLACE STOP LIGHT SWITCH**

OK

6 CHECK WIRE HARNESS (STOP LIGHT SWITCH - BATTERY)



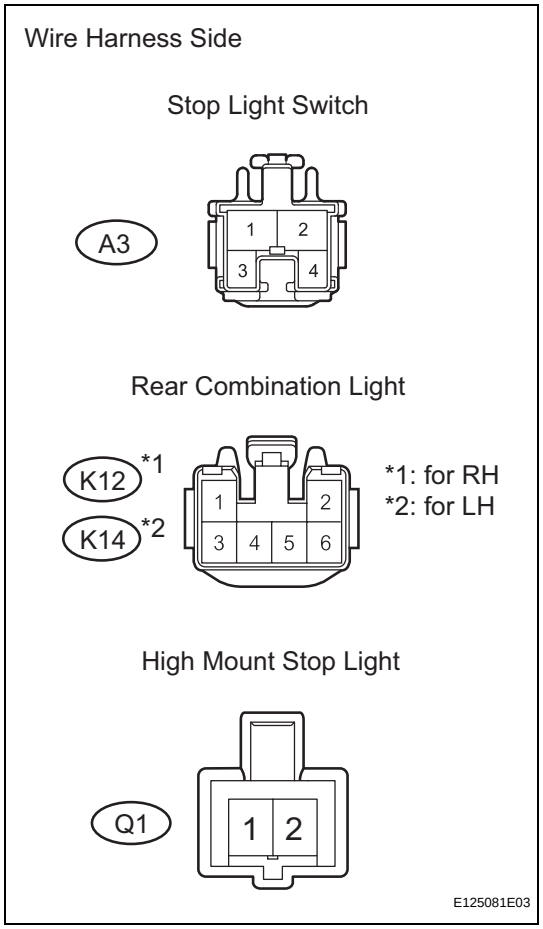
(a) Disconnect the A3 stop light switch connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Specified Condition
A3-2 - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

7 CHECK WIRE HARNESS (STOP LIGHT SWITCH - REAR STOP LIGHT)



(a) Disconnect the A3 stop light switch connector.
(b) Disconnect the K12 and K14 rear combination light connectors.
(c) Disconnect the Q1 high mount stop light connector.
(d) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
A3-1 - K12-4	Below 1 Ω
A3-1 or K12-4 - Body ground	10 kΩ or higher
A3-1 - K14-4	Below 1 Ω
A3-1 or K14-4 - Body ground	10 kΩ or higher
A3-1 - Q1-2	Below 1 Ω
A3-1 or Q1-2 - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

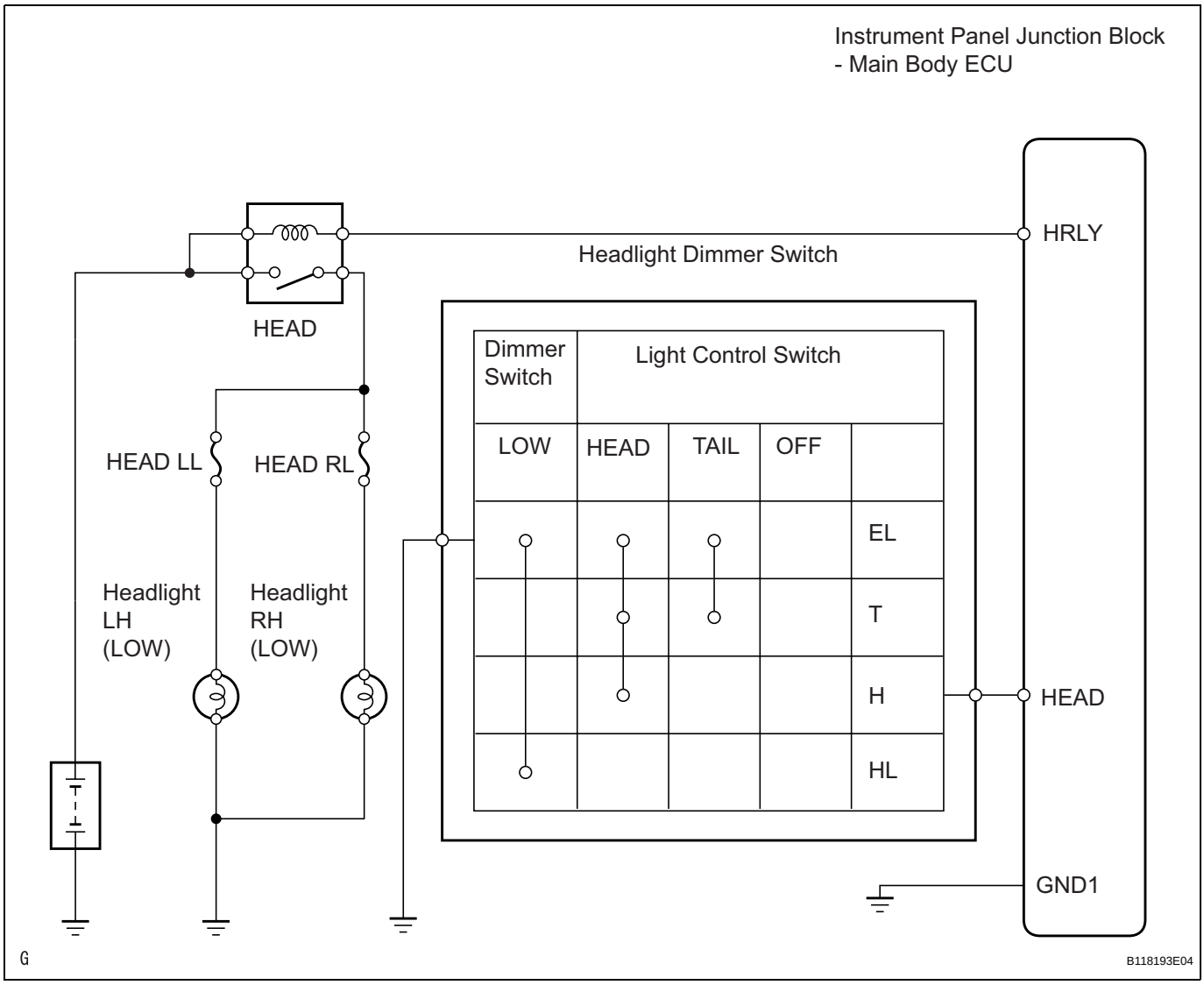
REPAIR OR REPLACE HARNESS AND CONNECTOR (REAR STOP LIGHT - BODY GROUND)

Headlight Relay Circuit

DESCRIPTION

When the light control switch, located on the headlight dimmer switch, is turned to the HEAD position, the HEAD relay illuminates the headlights.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER (HEADLIGHT)

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch ON and press the intelligent tester main switch ON.
(c) Select the item below in the ACTIVE TEST and then check the relay operation.

Main body ECU

Item	Test Details: Display (Range)	Diagnostic Note
HEAD LIGHT	Headlight Relay ON/OFF	-

OK:
Headlight comes on

OK → **Go to step 7**

NG

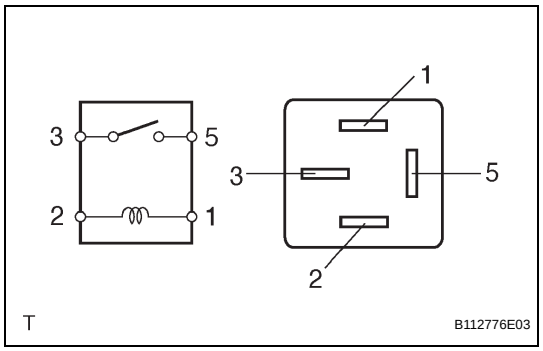
2 INSPECT FUSE (HEAD LL, HEAD RL)

(a) Remove the HEAD LL fuse and HEAD RL fuse from the engine room No. 2 relay block.
(b) Measure the resistance of the fuses.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

3 INSPECT HEADLIGHT RELAY (Marking: HEAD)



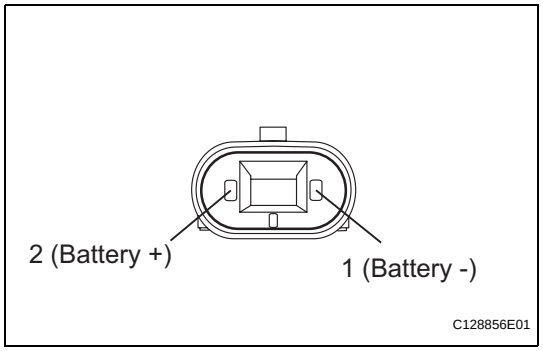
(a) Remove the headlight relay from the engine room No. 2 relay block.
(b) Measure the resistance of the relay.
Standard resistance

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (Battery voltage applied to terminals 1 and 2)

NG → **REPLACE HEADLIGHT RELAY**

OK

4 INSPECT BULB (HEADLIGHT BULB)



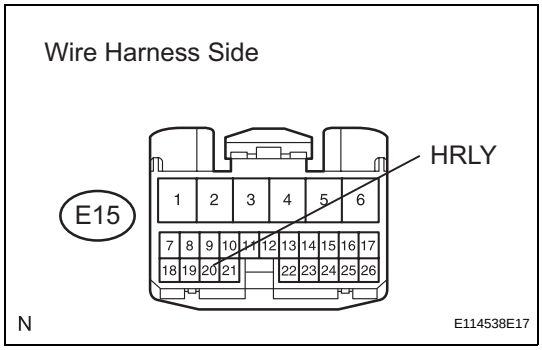
(a) Remove the headlight bulbs (LOW).
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the bulb illuminates.
OK:
Bulb illuminates.

NG → **REPLACE BULB**

LI

OK

5 CHECK WIRE HARNESS (MAIN BODY ECU - BATTERY)



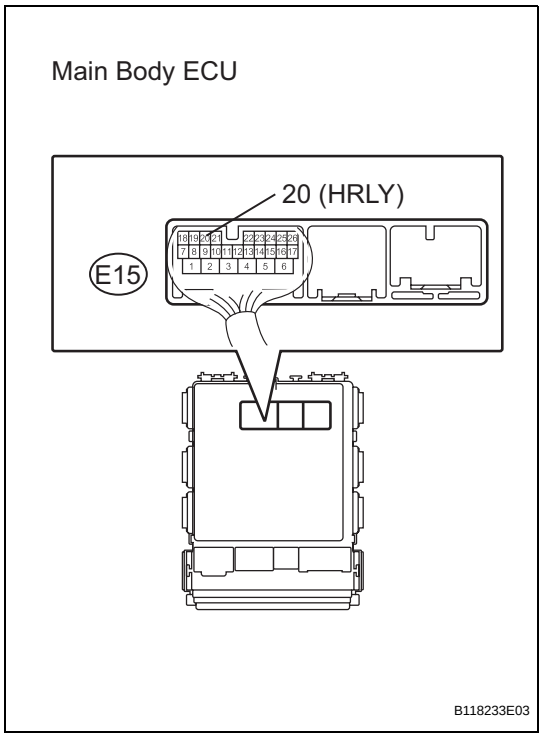
(a) Disconnect the E15 main body ECU connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Specified Condition
E15-20 (HRLY) - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

6 CHECK INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)



(a) Measure the voltage of the main body ECU.
Standard voltage

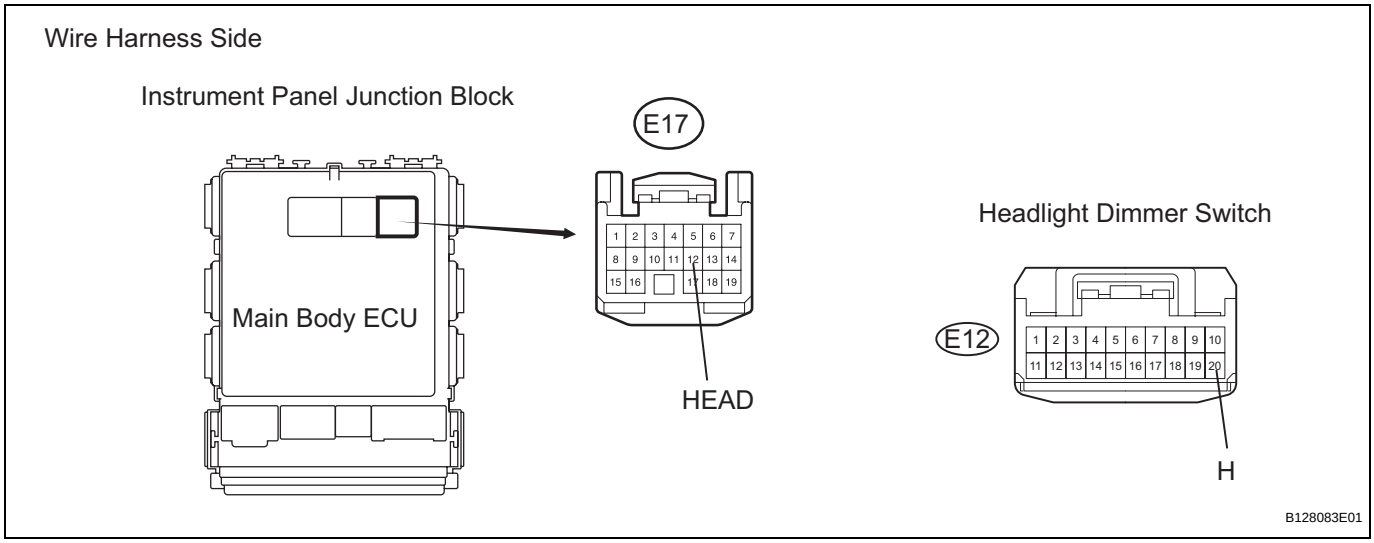
Tester Connection	Condition	Specified Condition
E15-20 (HRLY) - Body ground	Light control switch OFF	10 to 14 V
E15-20 (HRLY) - Body ground	Light control switch HEAD	Below 1 V

NG → **REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)**

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR (HEAD RELAY - HEADLIGHT BULB AND BODY GROUND)

7 CHECK WIRE HARNESS (HEADLIGHT DIMMER SWITCH - MAIN BODY ECU)



(a) Disconnect the E17 main body ECU connector.
(b) Disconnect the E12 headlight dimmer switch connector.
(c) Measure the resistance of the wire harness side connectors.

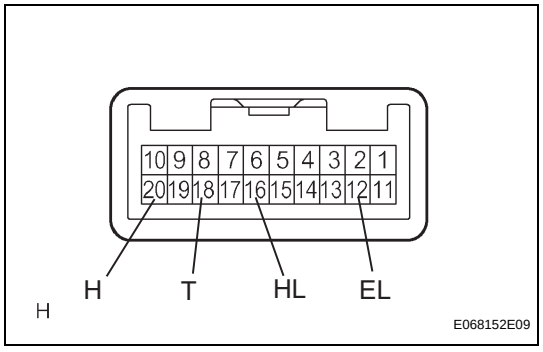
Standard resistance

Tester Connection	Specified Condition
E17-12 (HEAD) - E12-20 (H)	Below 1 Ω
E17-12 (HEAD) or E12-20 (H) - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

8 INSPECT HEADLIGHT DIMMER SWITCH



(a) Disconnect the E12 headlight dimmer switch.
(b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Switch Condition	Specified Condition
18 (T) - 12 (EL)	TAIL	Below 1 Ω
18 (T) - 12 (EL)	OFF	10 kΩ or higher
20 (H) - 12 (EL)	HEAD	Below 1 Ω
20 (H) - 12 (EL)	OFF	10 kΩ or higher
16 (HL) - 12 (EL)	LOW	Below 1 Ω
16 (HL) - 12 (EL)	HIGH	10 kΩ or higher

NG → **REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY**

LI

OK

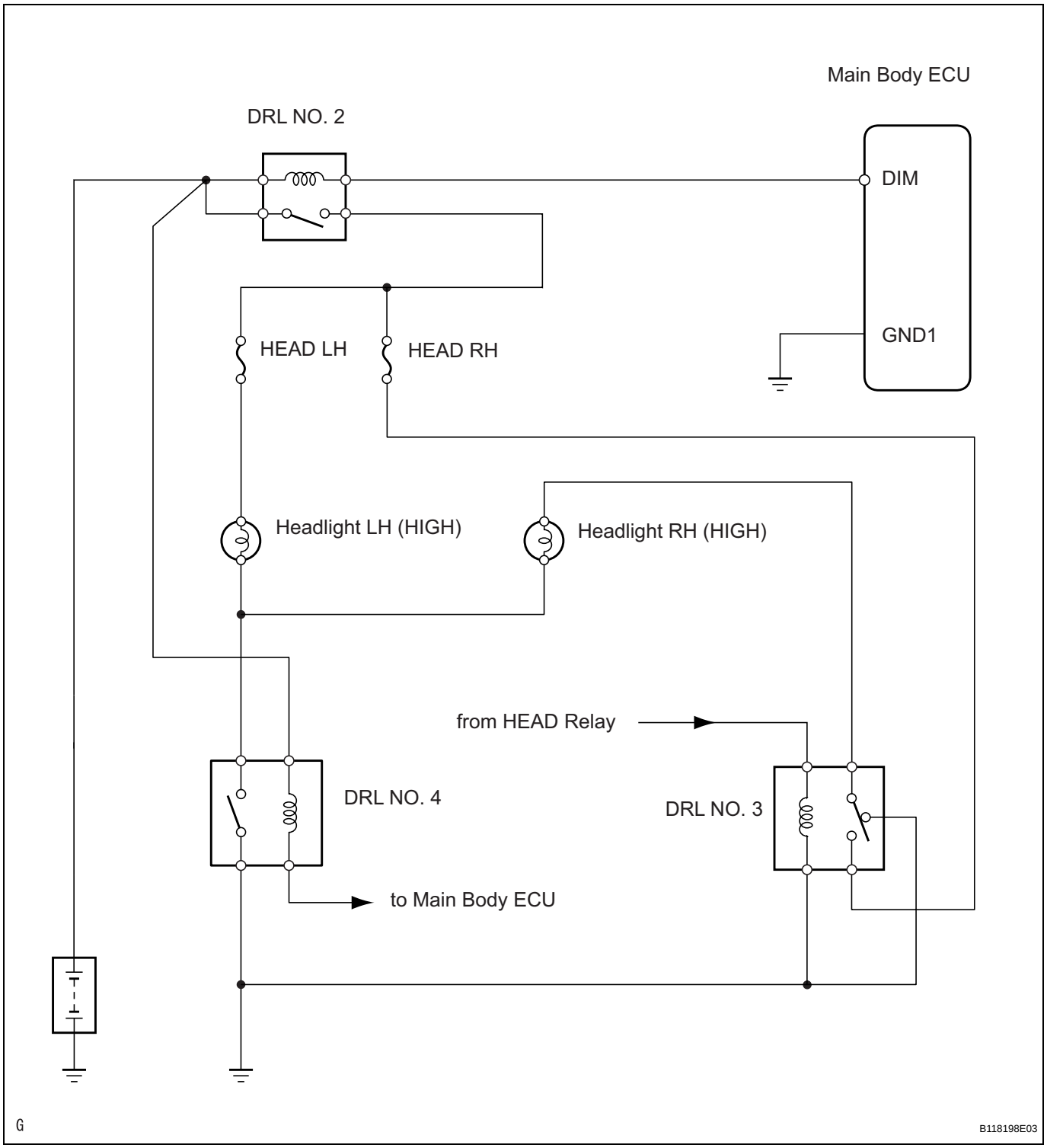
REPAIR OR REPLACE HARNESS AND CONNECTOR (HEADLIGHT DIMMER SWITCH - BODY GROUND)

DRL Relay Circuit

DESCRIPTION

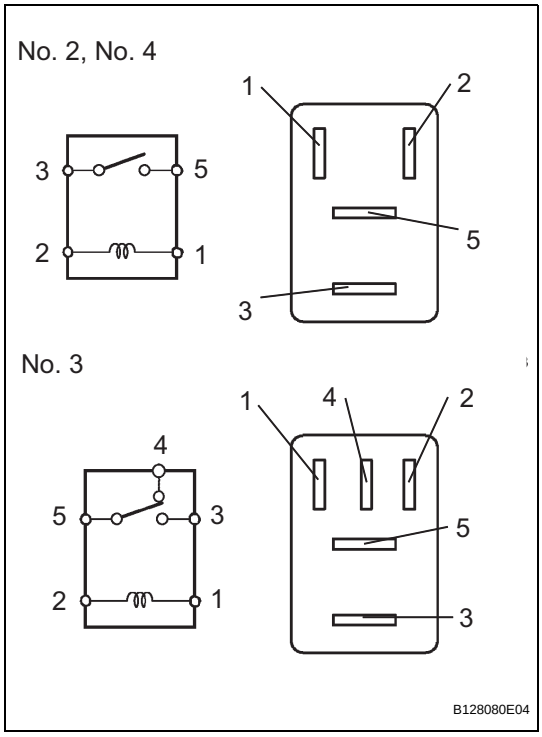
The main body ECU controls the daytime running light No. 2 relay (Marking: DRL NO.2).

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT DAYTIME RUNNING LIGHT RELAY (Marking: DRL NO. 2, DRL NO. 3, DRL NO. 4)



(a) Remove the No. 2 relay, No. 3 relay and No. 4 relay from the engine room No. 2 relay block.
(b) Measure the resistance of the relays.
Standard resistance:
No. 2, No. 4

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (Battery voltage applied to terminals 1 and 2)

No. 3

Tester Connection	Specified Condition
4 - 5	Below 1 Ω
4 - 5	10 kΩ or higher (Battery voltage applied to terminals 1 and 2)
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (Battery voltage applied to terminals 1 and 2)

NG → **REPLACE DAYTIME RUNNING LIGHT RELAY**

OK

2	INSPECT FUSE (HEAD LH)

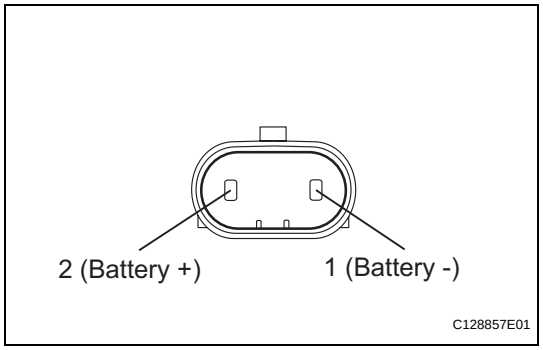
(a) Remove the HEAD LH fuse from the engine room No. 2 relay block.
(b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

LI

3 INSPECT HEADLIGHT BULB (HIGH)

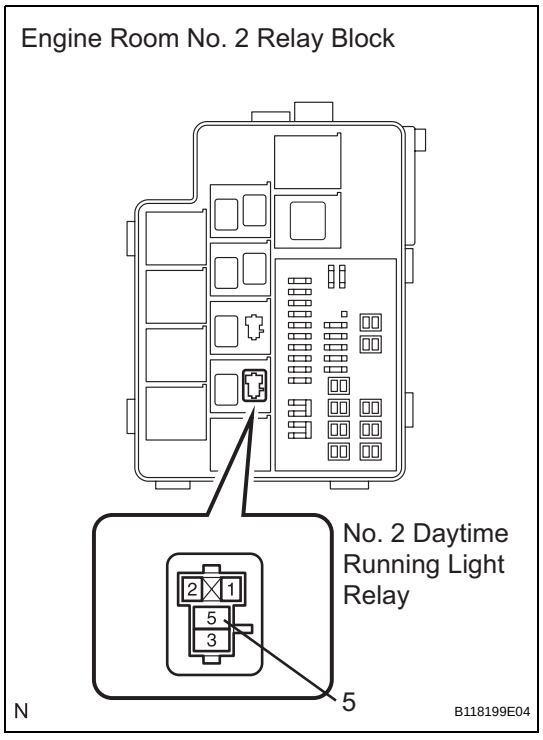


(a) Remove the headlight bulb (high).
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the bulb illuminates.

NG → **REPLACE HEADLIGHT BULB (HIGH)**

OK

4 CHECK WIRE HARNESS (BATTERY - NO. 2 DAYTIME RUNNING LIGHT RELAY)



(a) Remove the No. 2 daytime running light relay from the engine room No. 2 relay block.
(b) Measure the voltage of the relay block.
Standard voltage

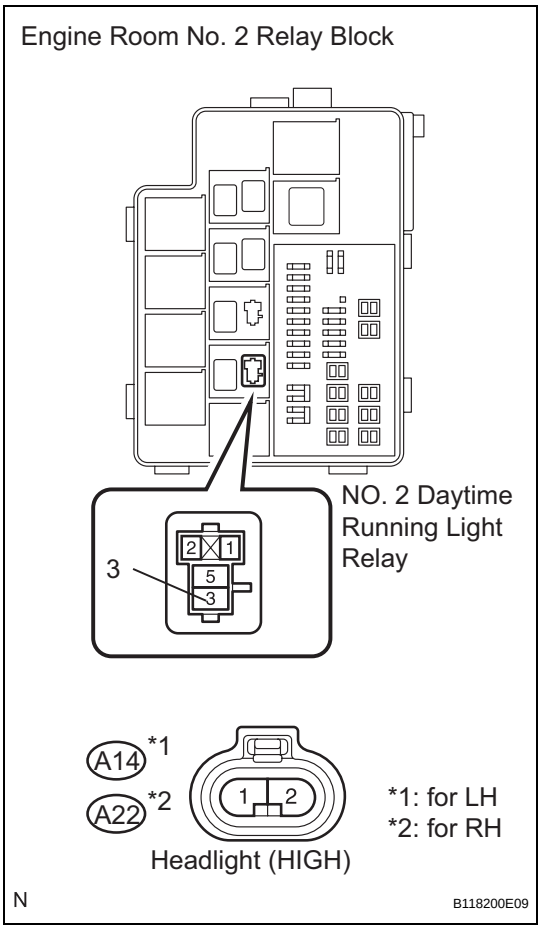
Tester Connection	Specified Condition
Relay block daytime running light No. 2 relay terminal 5 - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

LI

5	CHECK WIRE HARNESS (NO. 2 DAYTIME RUNNING LIGHT RELAY - HEADLIGHT BULB AND BODY GROUND)



(a) Remove the No. 2 daytime running light relay from the engine room No. 2 relay block.
(b) Disconnect the A14 and A22 headlight (HIGH) connectors.
(c) Measure the resistance of the wire harness side connectors and relay block.

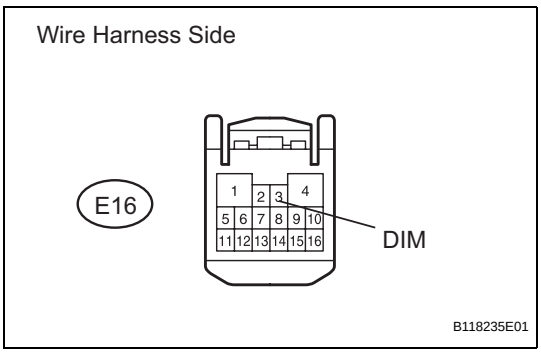
Standard resistance

Tester Connection	Specified Condition
Relay block daytime running light No. 2 relay terminal 3 - A14-2	Below 1 Ω
A14-2 - Body ground	10 kΩ or higher
A14-1 - A22-1	Below 1 Ω
A14-1 - Body ground	10 kΩ or higher
A22-2 - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

6	CHECK WIRE HARNESS (MAIN BODY ECU - BATTERY)



(a) Disconnect the E16 main body ECU connector.
(b) Measure the voltage of the wire harness side connector.

Standard voltage

Tester Connection	Specified Condition
E16-3 (DIM) - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

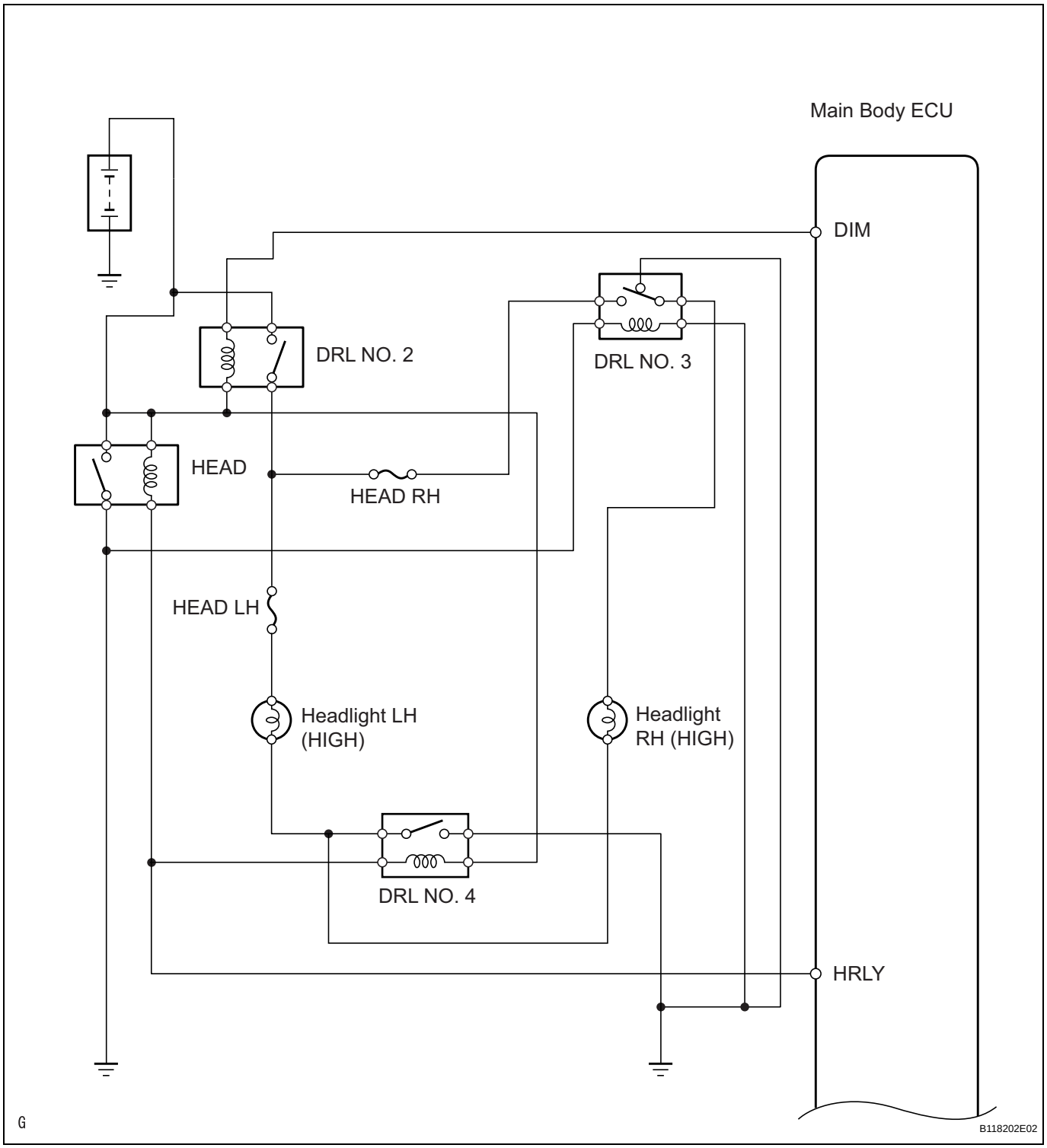
LI

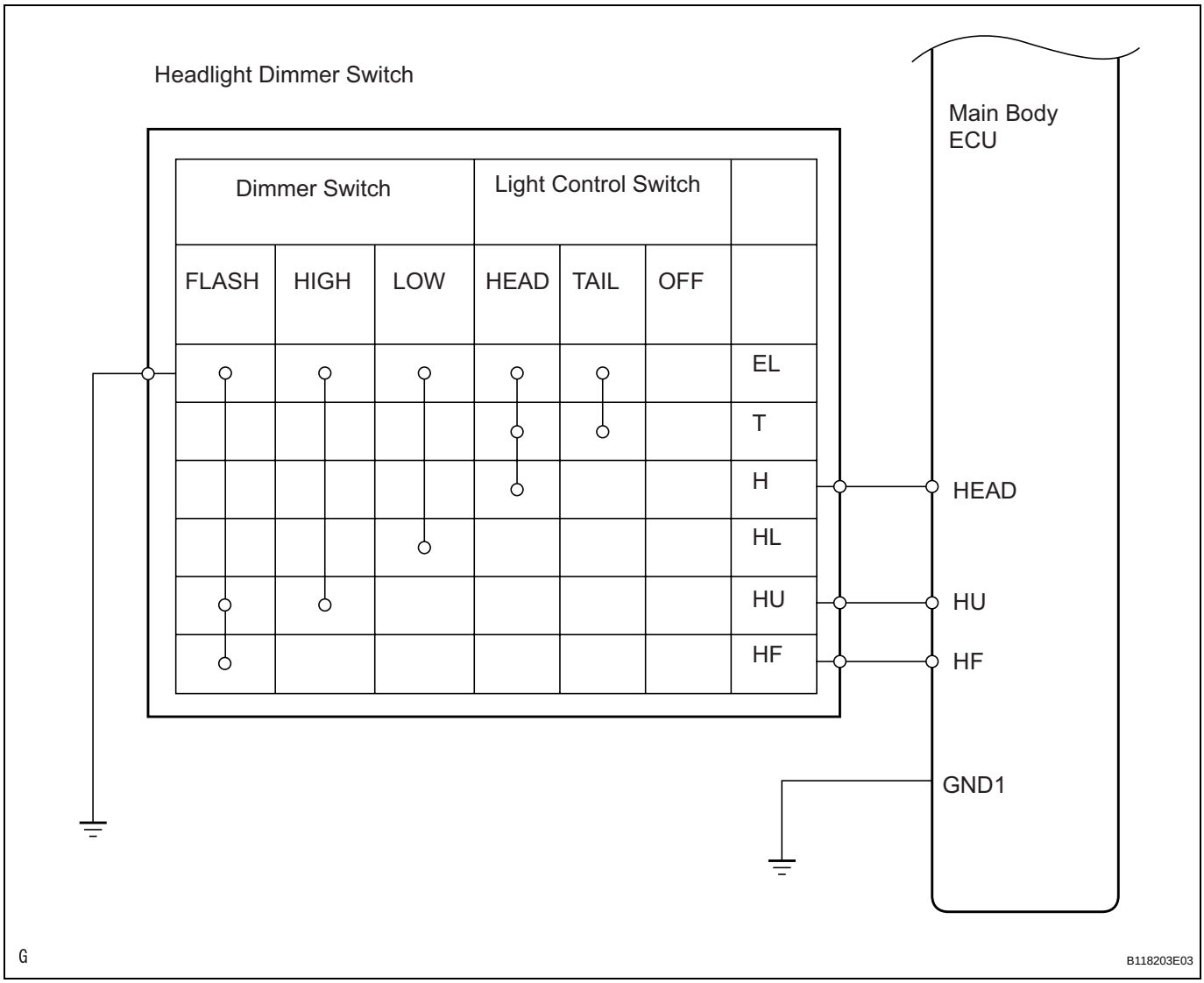
Headlight (HI-BEAM) Circuit

DESCRIPTION

The body ECU controls the headlight relay, No. 2 daytime running light relay (Marking: DRL NO. 2) and No. 4 daytime running light relay (Marking: DRL NO. 4).

WIRING DIAGRAM





INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the item below in the ACTIVE TEST and then check the relay operation.

Main body ECU

Item	Test Details	Diagnostic Note
HEADLIGHT HI	Turn headlight dimmer relay (Headlight dimmer switch HI position): ON / OFF	-

OK:
Headlight (HIGH) comes on.

OK	Go to step 10

NG

2	CHECK HEADLIGHT (LOW)

(a) Check that the headlight (LOW) comes on when the light control switch is on (HEAD).
OK:
Headlight (LOW) comes on.

NG → **GO TO HEADLIGHT RELAY CIRCUIT**

OK

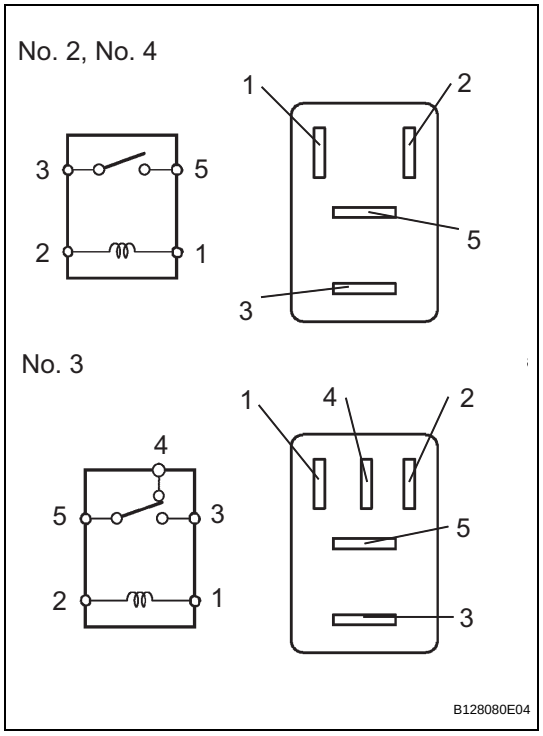
3	INSPECT FUSE (HEAD LH, HEAD RH)

(a) Remove the HEAD LH fuse and HEAD RH fuse from the engine room No. 2 relay block.
(b) Measure the resistance of the fuses.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

4	INSPECT DAYTIME RUNNING LIGHT RELAY (Marking: DRL NO. 2, DRL NO. 3, DRL NO. 4)



(a) Remove the No. 2 relay, No. 3 relay and No. 4 relay from the engine room No. 2 relay block.
(b) Measure the resistance of the relays.
Standard resistance:
No. 2, No. 4

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (Battery voltage applied to terminals 1 and 2)

No. 3

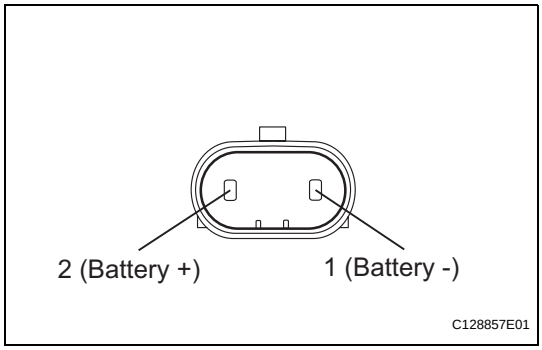
Tester Connection	Specified Condition
4 - 5	Below 1 Ω
4 - 5	10 kΩ or higher (Battery voltage applied to terminals 1 and 2)
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (Battery voltage applied to terminals 1 and 2)

NG → **REPLACE DAYTIME RUNNING LIGHT RELAY**

OK

LI

5	INSPECT HEADLIGHT BULB (HIGH)

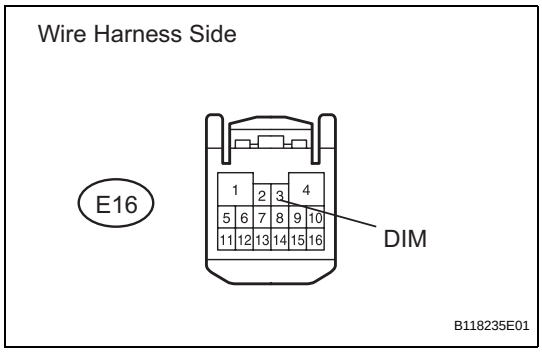


(a) Remove the headlight bulb (HIGH).
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the bulb illuminates.

NG → **REPLACE HEADLIGHT BULB (HIGH)**

OK

6	CHECK WIRE HARNESS (MAIN BODY ECU - BATTERY)



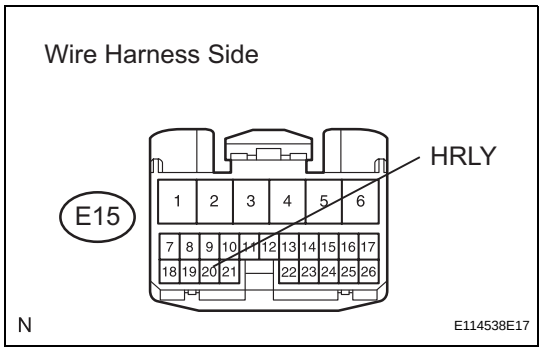
(a) Disconnect the E16 main body ECU connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Specified Condition
E16-3 (DIM) - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

7	CHECK WIRE HARNESS (MAIN BODY ECU)



(a) Remove the headlight relay from the engine room No. 2 relay block.
(b) Disconnect the E15 main body ECU connector.
(c) Measure the voltage of the wire harness side connector.
Standard voltage

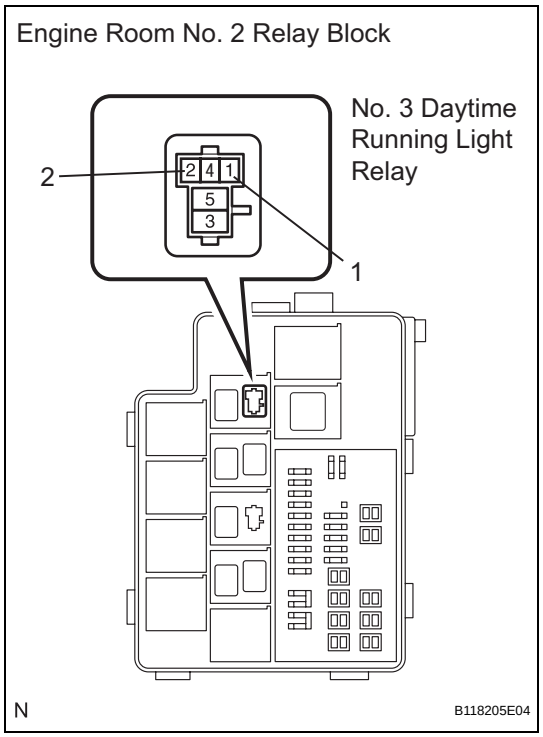
Tester Connection	Specified Condition
E15-20 (HRLY) - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

LI

8	CHECK WIRE HARNESS (HEADLIGHT RELAY - NO. 3 DAYTIME RUNNING LIGHT RELAY AND BODY GROUND)



(a) Remove the No. 3 daytime running light relay from the engine room No. 2 relay block.

(b) Measure the voltage and resistance of the relay block.

Standard voltage

Tester Connection	Condition	Specified Condition
Relay block No. 3 daytime running light relay terminal 1 - Body ground	Light control switch ON (HEAD) Dimmer switch position LOW	10 to 14 V

Standard resistance

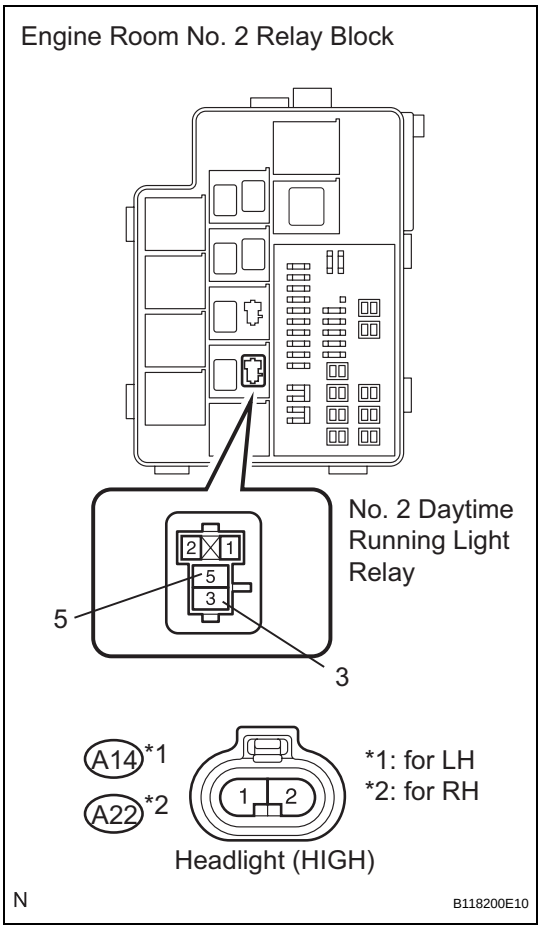
Tester Connection	Specified Condition
Relay block No. 3 daytime running light relay terminal 2 - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

LI

9	CHECK WIRE HARNESS (BATTERY - NO. 2 DAYTIME RUNNING LIGHT RELAY, BULB AND BODY GROUND)



(a) Remove the No. 2 daytime running light relay from the engine room No. 2 relay block.
(b) Remove the A14 and A22 headlight bulb connectors.
(c) Measure the voltage and resistance of the relay block.

Standard voltage

Tester Connection	Specified Condition
Relay block No. 2 daytime running light relay terminal 5 - Body ground	10 to 14 V

Standard resistance

Tester Connection	Condition	Specified Condition
Relay block No. 2 daytime running light relay terminal 3 - A14-2	Always	Below 1 Ω
Relay block No. 2 daytime running light relay terminal 3 - Body ground	Always	10 kΩ or higher
A14-1 - A22-1	Always	Below 1 Ω
A14-1 or A22-1 - Body ground	Always	10 kΩ or higher
A22-2 - Body ground	Always	Below 1 Ω
Relay block No. 2 daytime running light relay terminal 3 - A22-2	Light control switch ON (HEAD) Dimmer switch position LOW	Below 1 Ω
Relay block No. 2 daytime running light relay terminal 3 - Body ground	Light control switch ON (HEAD) Dimmer switch position LOW	10 kΩ or higher
A22-1 - Body ground	Light control switch ON (HEAD) Dimmer switch position LOW	Below 1 Ω

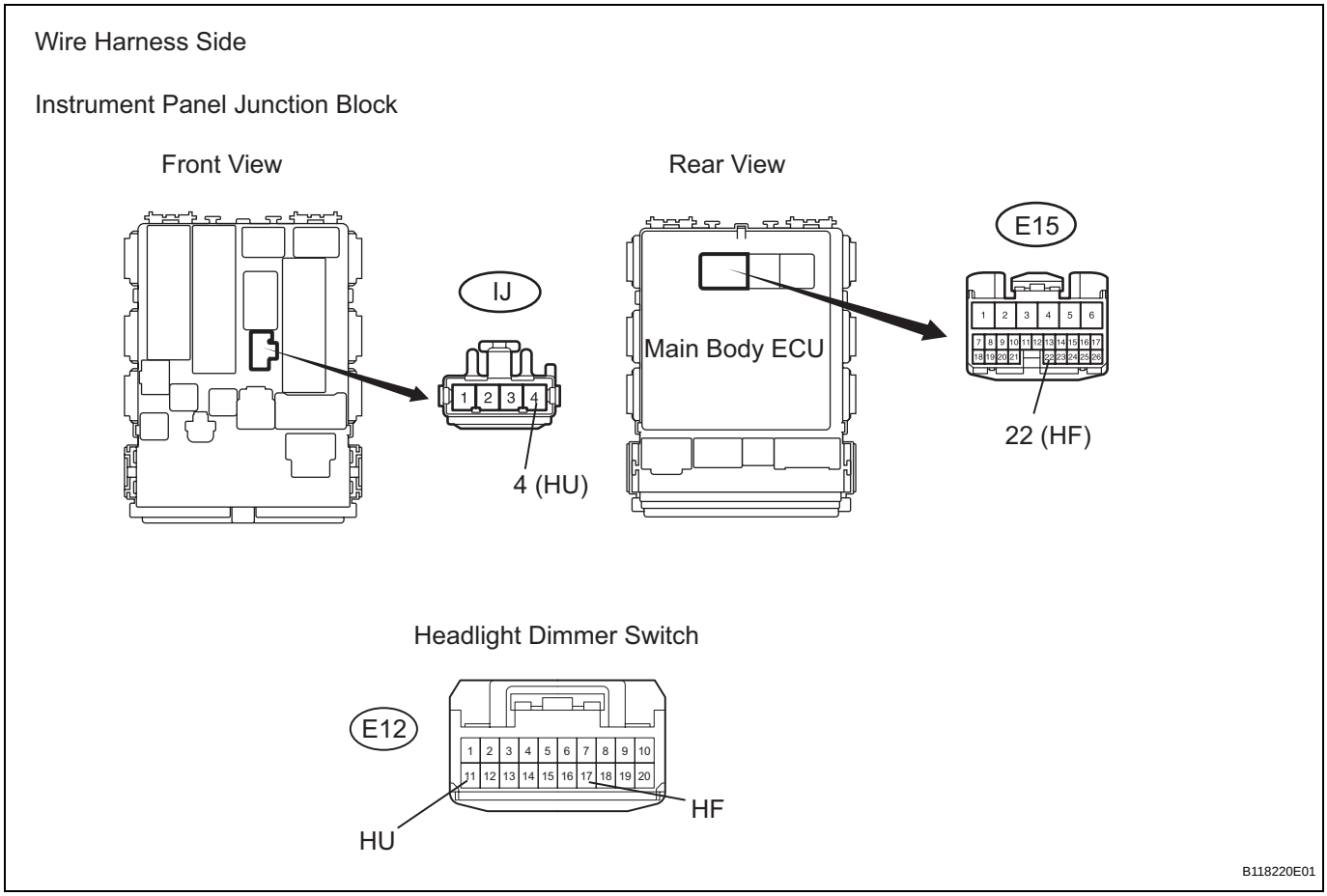
NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

LI

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

10	CHECK WIRE HARNESS (MAIN BODY ECU - DIMMER SWITCH)



(a) Disconnect the E15 main body ECU connector.
(b) Disconnect the E12 headlight dimmer switch connector.
(c) Disconnect the IJ instrument panel junction block connector.
(d) Measure the resistance of the wire harness side connectors.

Standard resistance

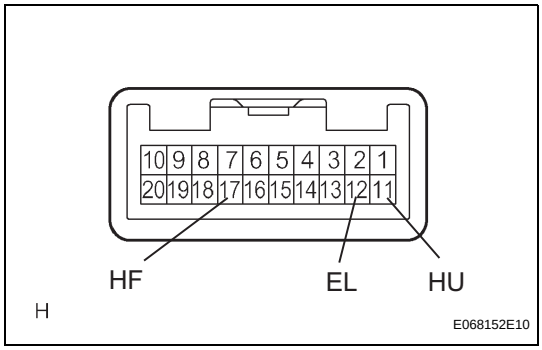
Tester Connection	Specified Condition
E15-22 (HF) - E12-17 (HF)	Below 1 Ω
E15-22 (HF) or E12-17 (HF) - Body ground	10 kΩ or higher
IJ-4 (HU) - E12-11 (HU)	Below 1 Ω
IJ-4 (HU) or E12-11 (HU) - Body ground	10 kΩ or higher

LI

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

11	INSPECT HEADLIGHT DIMMER SWITCH



(a) Remove the headlight dimmer switch.
(b) Measure the resistance of the switch.
Standard resistance

Tester Connection	Condition	Specified Condition
11 (HU) - 12 (EL)	Dimmer switch HIGH	Below 1 Ω
17 (HF) - 12 (EL)	Dimmer switch FLASH	Below 1 Ω

NG → **REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY**

OK

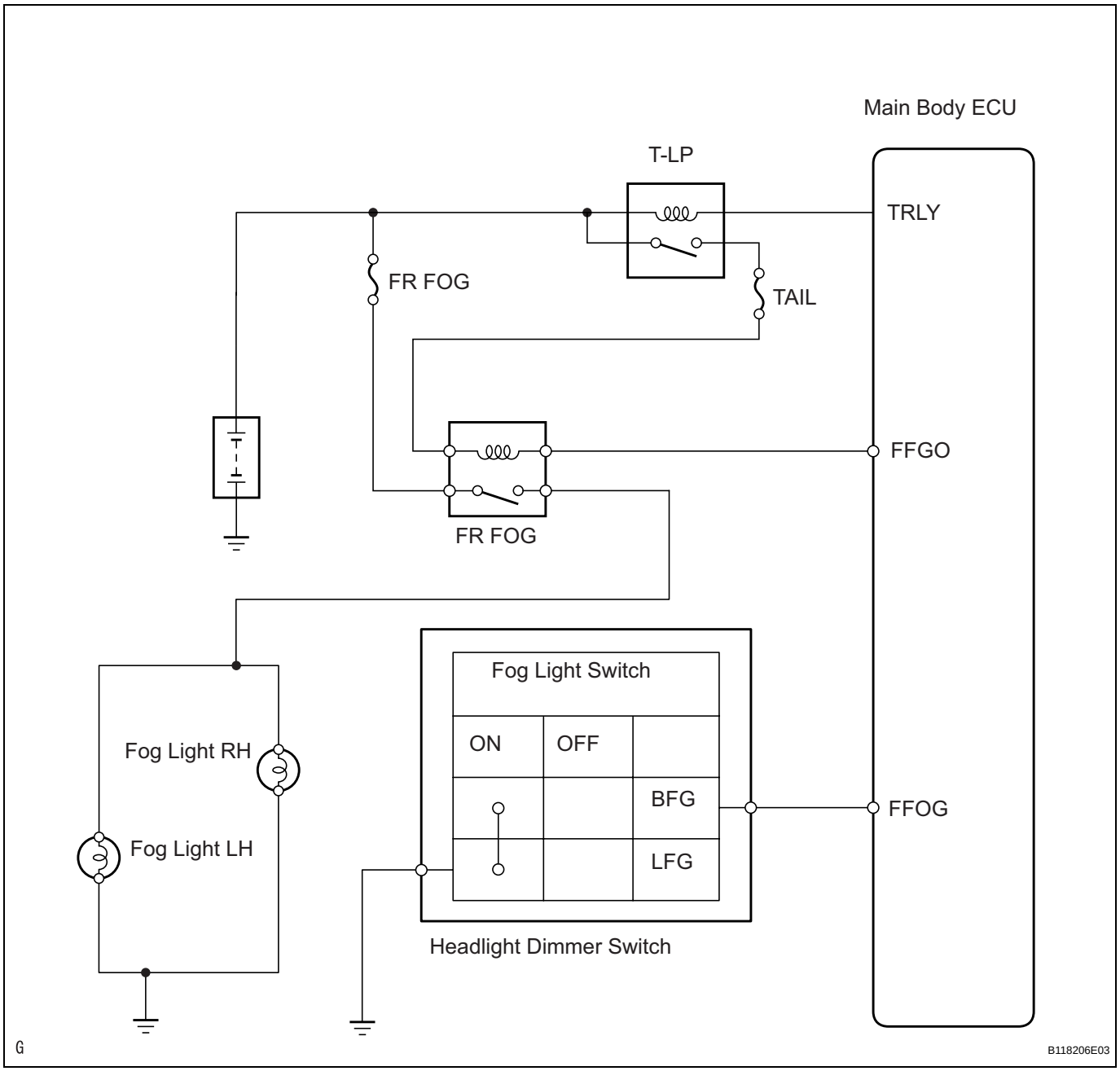
REPAIR OR REPLACE HARNESS AND CONNECTOR (HEADLIGHT DIMMER SWITCH - BODY GROUND)

Front Fog Light Circuit

DESCRIPTION

The main body ECU controls the front fog light relay (Marking: FR FOG) when a signal is received from the headlight dimmer switch.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.

LI

(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the item below in the ACTIVE TEST and then check the relay operation.

Main body ECU

Item	Test Details	Diagnostic Note
F FOG LIGHT RLY	Turn front fog light relay: ON / OFF	-

OK:
Front fog light comes on.

OK → **Go to step 9**

NG

2 CHECK TAILLIGHT

(a) Check that the taillight comes on when the light control switch is on (TAIL).
OK:
Taillight comes on.

NG → **GO TO TAILLIGHT RELAY CIRCUIT**

OK

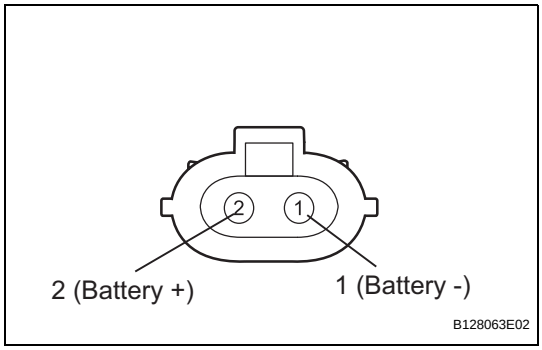
3 INSPECT FUSE (FR FOG)

(a) Remove the FR FOG fuse from the instrument panel junction block.
(b) Measure the resistance of the fuses.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

4 INSPECT FOG LIGHT BULB



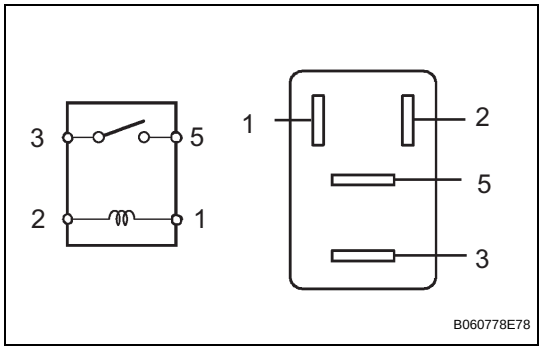
(a) Remove the fog light bulb.
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the bulb illuminates.
OK:
Bulb illuminates.

NG → **REPLACE FOG LIGHT BULB**

OK

LI

5 INSPECT FRONT FOG LIGHT RELAY (Marking: FR FOG)



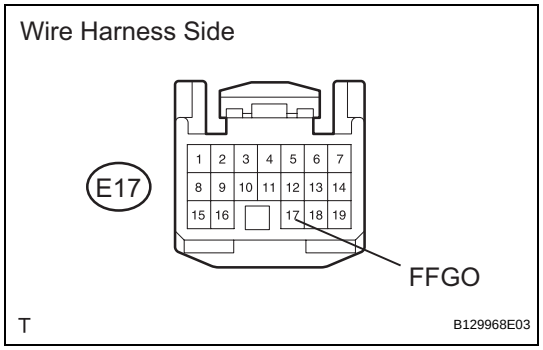
(a) Remove the front fog light relay from the No. 6 relay block.
(b) Measure the resistance of the relay.
Standard resistance

Tester Connection	Specified Condition
3 - 5	10 kΩ or higher
3 - 5	Below 1 Ω (Battery voltage applied to terminals 1 and 2)

NG → REPLACE FRONT FOG LIGHT RELAY

OK

6 CHECK WIRE HARNESS (BATTERY - MAIN BODY ECU)



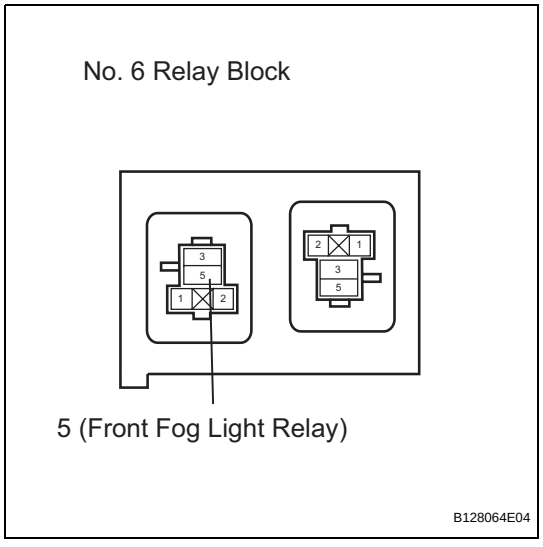
(a) Disconnect the E17 ECU connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Condition	Specified Condition
E17-17 (FFGO) - Body ground	Light control switch on (TAIL)	10 to 14 V

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

7 CHECK WIRE HARNESS (FRONT FOG LIGHT RELAY - BATTERY)



(a) Remove the front fog light relay from the No. 6 relay block.
(b) Measure the voltage of the relay block.
standard voltage

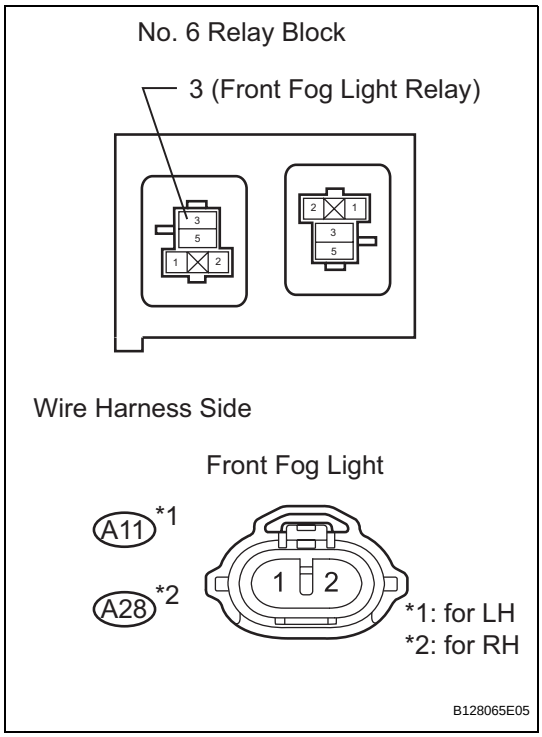
Tester Connection	Specified Condition
No. 6 relay block front fog light relay terminal 5 - Body ground	10 to 14 V

NG → REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

LI

8	CHECK WIRE HARNESS (FRONT FOG LIGHT RELAY - FRONT FOG LIGHT AND BODY GROUND)



(a) Remove the front fog light relay from the No. 6 relay block.
(b) Disconnect the A11 and A28 front fog light connectors.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

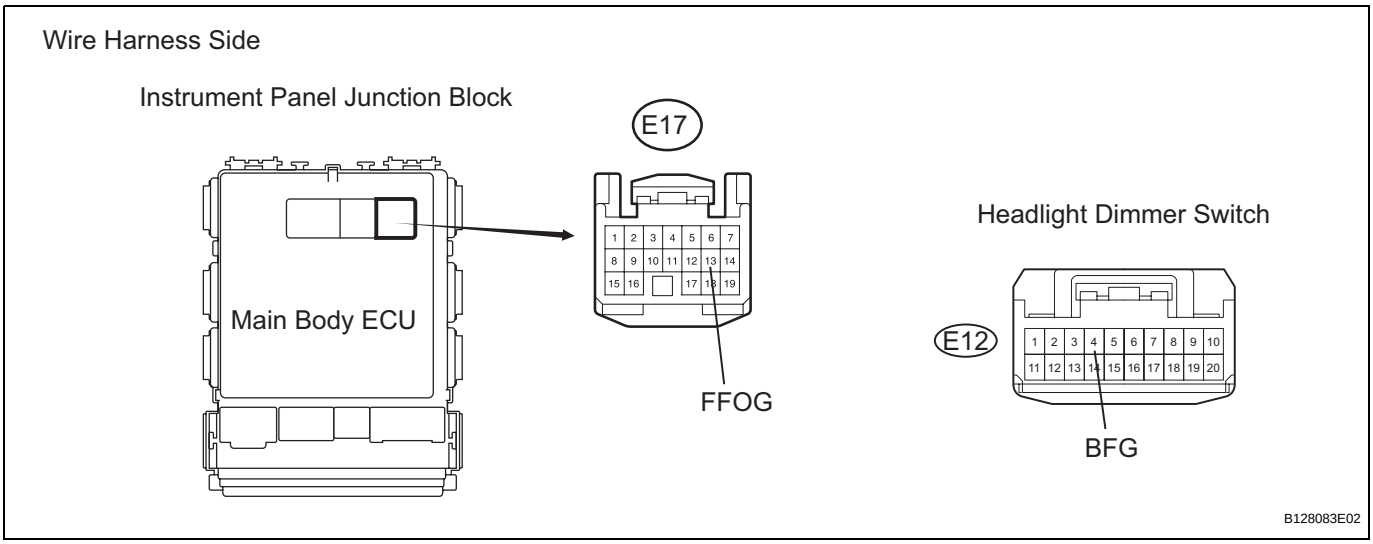
Tester Connection	Specified Condition
No. 6 relay block front fog light relay terminal 3 - A11-2	Below 1 Ω
No. 6 relay block front fog light relay terminal 3 or A11-2 - Body ground	10 kΩ or higher
No. 6 relay block front fog light relay terminal 3 - A28-2	Below 1 Ω
No. 6 relay block front fog light relay terminal 3 or A28-2 - Body ground	10 kΩ or higher
A11-1 - Body ground	Below 1 Ω
A28-1 - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

9	CHECK WIRE HARNESS (DIMMER SWITCH - MAIN BODY ECU AND BODY GROUND)



(a) Disconnect the E12 headlight dimmer switch connector.
(b) Disconnect the E17 main body ECU connector.

(c) Measure the resistance of the wire harness side connectors.

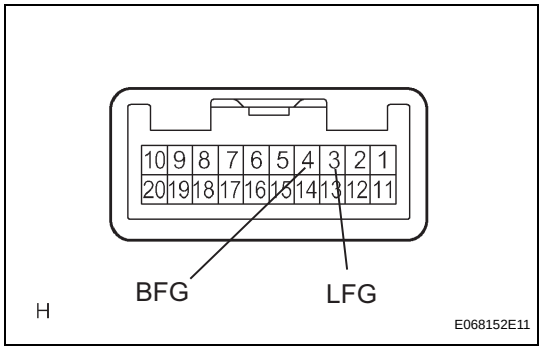
Standard resistance

Tester Connection	Specified Condition
E17-13 (FFOG) - E12-4 (BFG)	Below 1 Ω
E17-13 (FFOG) or E12-4 (BFG) - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

10 INSPECT FOG LIGHT SWITCH



(a) Remove the headlight dimmer switch.

(b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Condition	Specified Condition
4 (BFG) - 3 (LFG)	Fog light switch OFF	10 kΩ or higher
4 (BFG) - 3 (LFG)	Fog light switch ON	Below 1 Ω

NG → **REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY**

OK

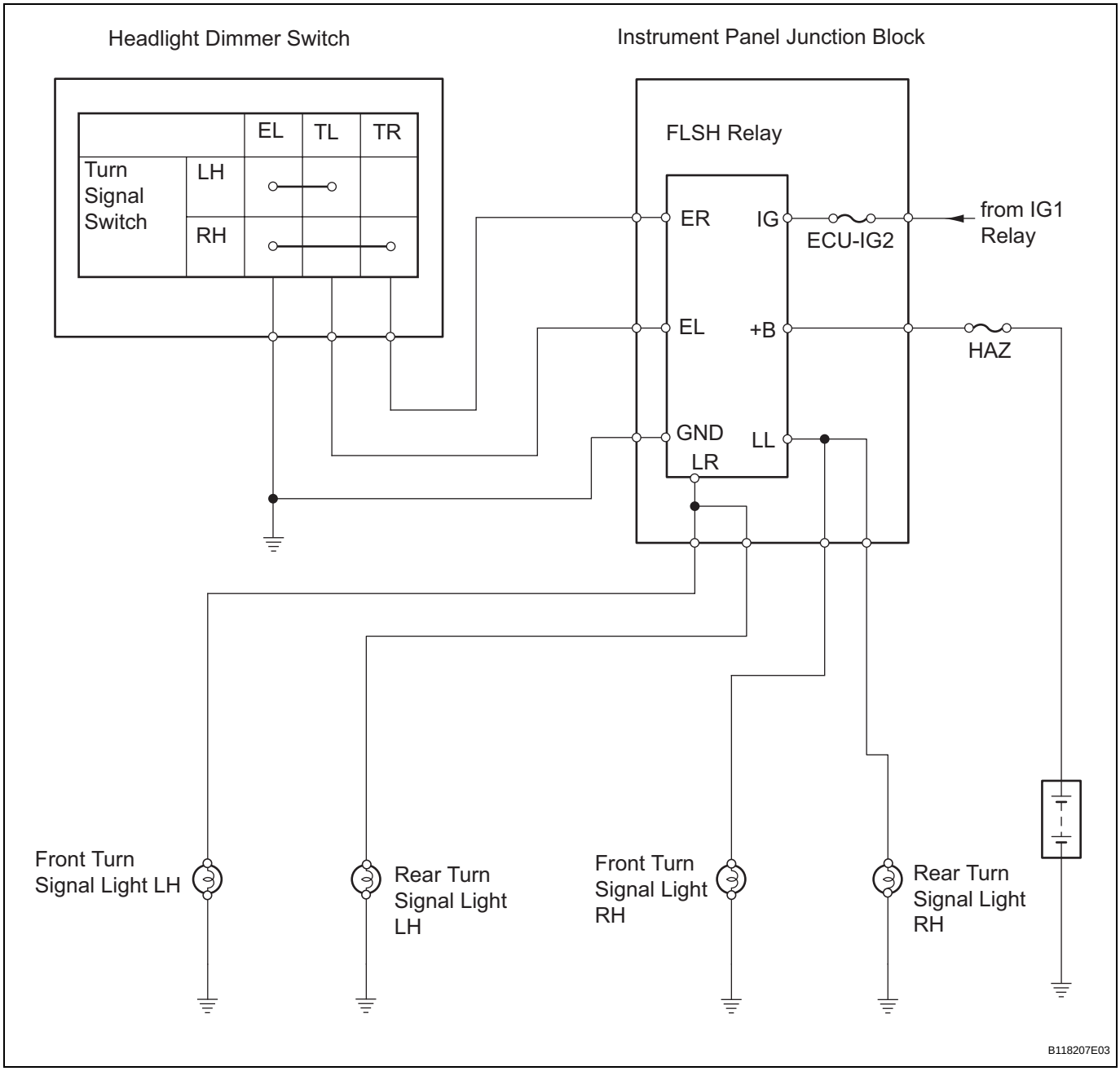
REPAIR OR REPLACE HARNESS AND CONNECTOR (HEADLIGHT DIMMER SWITCH - BODY GROUND)

Turn Signal Light Circuit

DESCRIPTION

The turn signal flasher relay (Marking: FLSH) in the main body ECU turns on when it receives signals from the headlight dimmer switch integrated with the turn signal switch, causing the turn signal lights to flash.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	CHECK OPERATION OF TURN SIGNAL LIGHT

(a) When the turn signal light switch is operated, check that the appropriate turn signal light flashes.

Result

Condition	Proceed to
All lights do not flash	A
Front turn signal light (LH or RH) does not flash	B
Rear turn signal light (LH or RH) does not flash	C

B → **Go to step 6**

C → **Go to step 8**

A

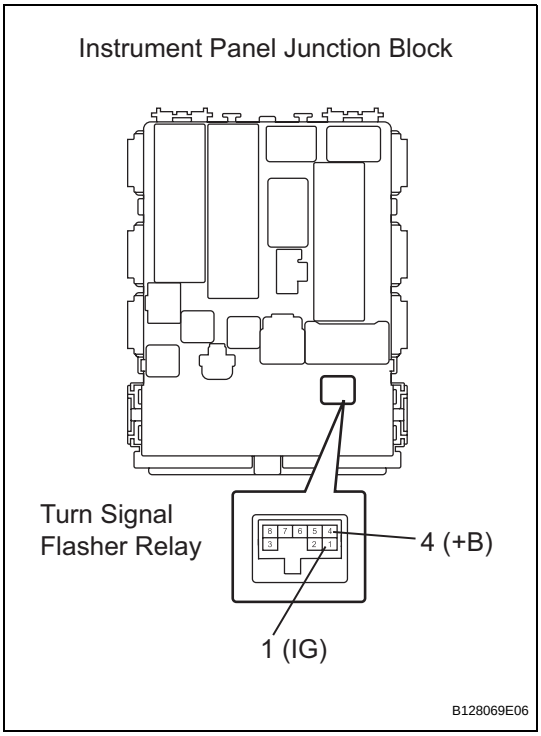
2	INSPECT FUSE (ECU-IG2, HAZ)

(a) Remove the ECU-IG2 fuse from the instrument panel junction block.
(b) Remove the HAZ fuse from the engine room No. 1 relay block.
(c) Measure the resistance of the fuses.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

3 CHECK WIRE HARNESS (BATTERY - TURN SIGNAL FLASHER RELAY)



(a) Disconnect the IB instrument panel junction block connector.
(b) Remove the turn signal flasher relay from the instrument panel junction block.
(c) Measure the voltage of the wire harness side connectors.

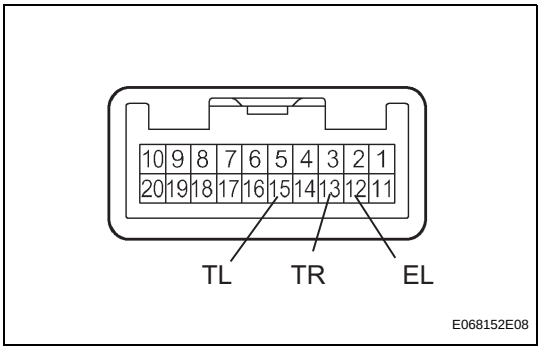
Standard voltage

Tester Connection	Condition	Specified Condition
Junction block turn signal flasher relay terminal 4 (+B) - Body ground	Always	10 to 14 V
Junction block turn signal flasher relay terminal 1 (IG) - Body ground	Ignition Switch ON	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

4 INSPECT HEADLIGHT DIMMER SWITCH



(a) Remove the headlight dimmer switch.
(b) Inspect the turn signal switch.
(c) Measure the resistance of the switch.

Standard resistance

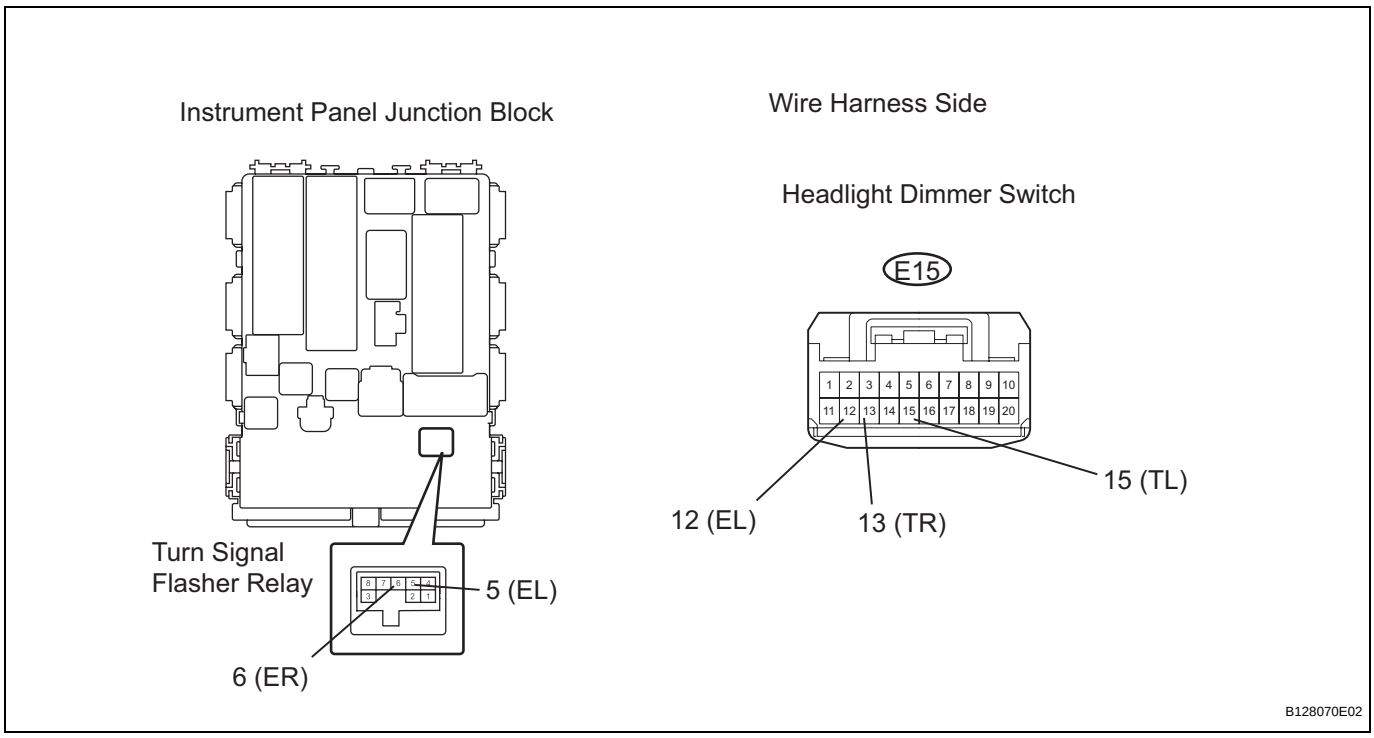
Tester Connection	Condition	Specified Condition
13 (TR) - 12 (EL)	Right	Below 1 Ω
13 (TR) - 12 (EL)	Neutral	10 kΩ or higher
15 (TL) - 12 (EL)	Left	Below 1 Ω
15 (TL) - 12 (EL)	Neutral	10 kΩ or higher

NG → **REPLACE HEADLIGHT DIMMER SWITCH**

OK

LI

5	CHECK WIRE HARNESS (HEADLIGHT DIMMER SWITCH - INSTRUMENT PANEL JUNCTION BLOCK)



(a) Remove the turn signal flasher relay.
(b) Disconnect the E15 headlight dimmer switch connector.
(c) Measure the resistance of the wire harness side connectors and junction block.

Standard resistance

Tester Connection	Specified Condition
Junction block turn signal flasher relay terminal 5 (EL) - E15-15 (TL)	Below 1 Ω
Junction block turn signal flasher relay terminal 5 (EL) or E15-15 (TL) - Body ground	10 kΩ or higher
Junction block turn signal flasher relay terminal 6 (ER) - E15-13 (TR)	Below 1 Ω
Junction block turn signal flasher relay terminal 6 (ER) or E15-13 (TR) - Body ground	10 kΩ or higher
E15-12 (EL) - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE TURN SIGNAL FLASHER RELAY

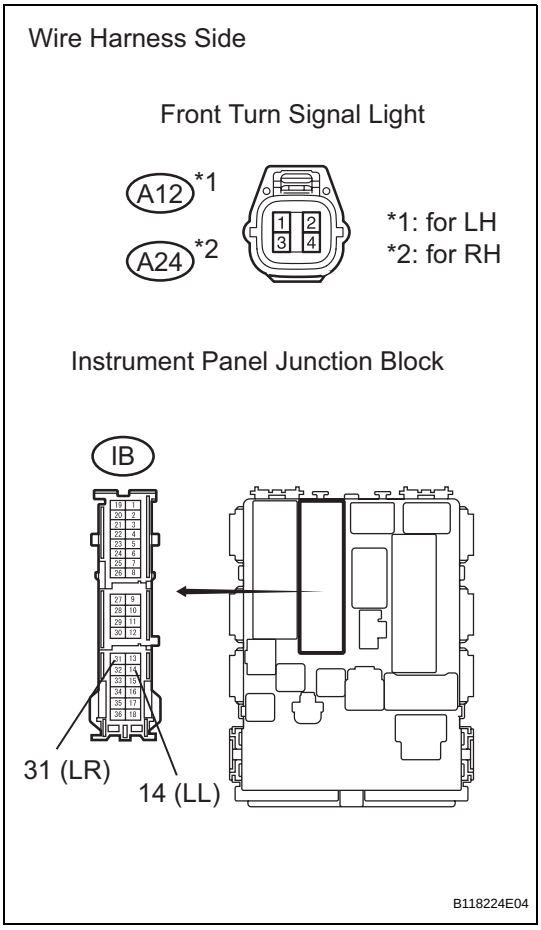
6	INSPECT FRONT TURN SIGNAL LIGHT

(a) Remove the front turn signal light.
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, then check that the light comes on.
OK:
Light comes on.

NG → **REPLACE BULB**

OK

7	CHECK WIRE HARNESS (INSTRUMENT PANEL JUNCTION BLOCK - FRONT TURN SIGNAL LIGHT)



(a) Disconnect the A12 and A24 front turn signal light connectors.
(b) Disconnect the IB instrument panel junction block connector.
(c) Measure the resistance of the wire harness side connectors.
Standard resistance

Tester Connection	Specified Condition
IB-31 (LR) - A24-1	Below 1 Ω
IB-31 (LR) or A24-1 - Body ground	10 kΩ or higher
IB-14 (LL) - A12-1	Below 1 Ω
IB-14 (LL) or A12-1 - Body ground	10 kΩ or higher

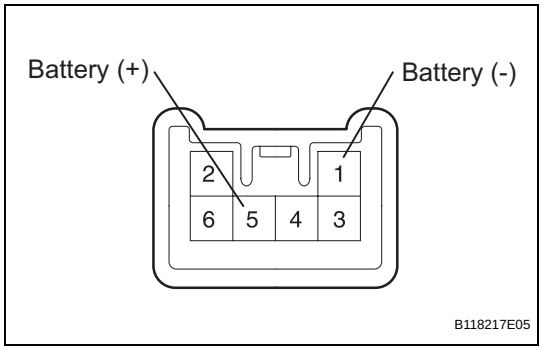
NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR (FRONT TURN SIGNAL LIGHT - BODY GROUND)

LI

8	INSPECT REAR TURN SIGNAL LIGHT

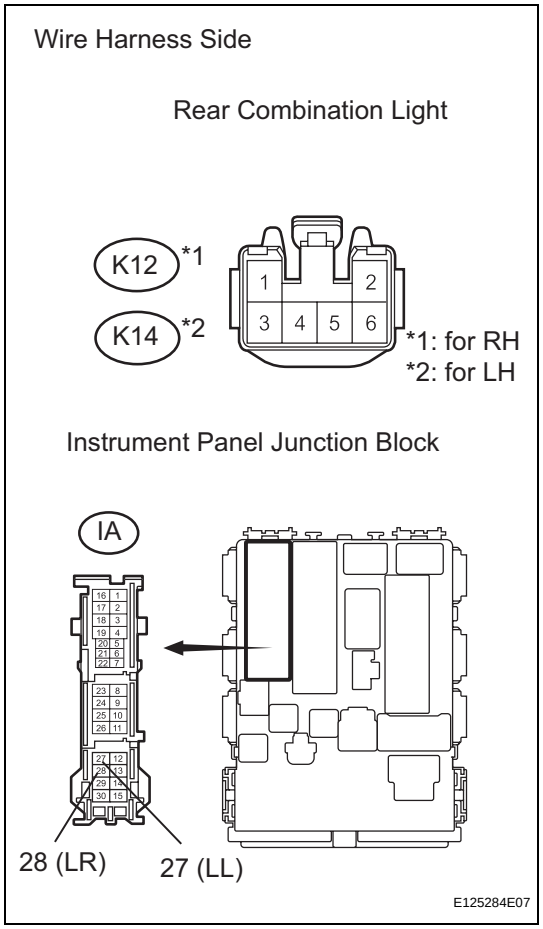


(a) Remove the rear combinationl light.
(b) Connect the positive (+) lead from the battery to terminal 5 and the negative (-) lead to terminal 1, then check that the light comes on.
OK:
Light comes on.

NG → **REPLACE BULB**

OK

9	CHECK WIRE HARNESS (INSTRUMENT PANEL JUNCTION BLOCK - REAR TURN SIGNAL LIGHT)



(a) Disconnect the K12 and K14 rear combination light connectors.
(b) Disconnect the IA instrument panel junction block connector.
(c) Measure the resistance of the wire harness side connectors.
Standard resistance

Tester Connection	Specified Condition
IA-28 (LR) - K12-5	Below 1 Ω
IA-28 (LR) or K12-5 - Body ground	10 kΩ or higher
IA-27 (LL) - K14-5	Below 1 Ω
IA-27 (LL) or K14-5 - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPAIR OR REPLACE HARNESS AND CONNECTOR (REAR TURN SIGNAL LIGHT - BODY GROUND)

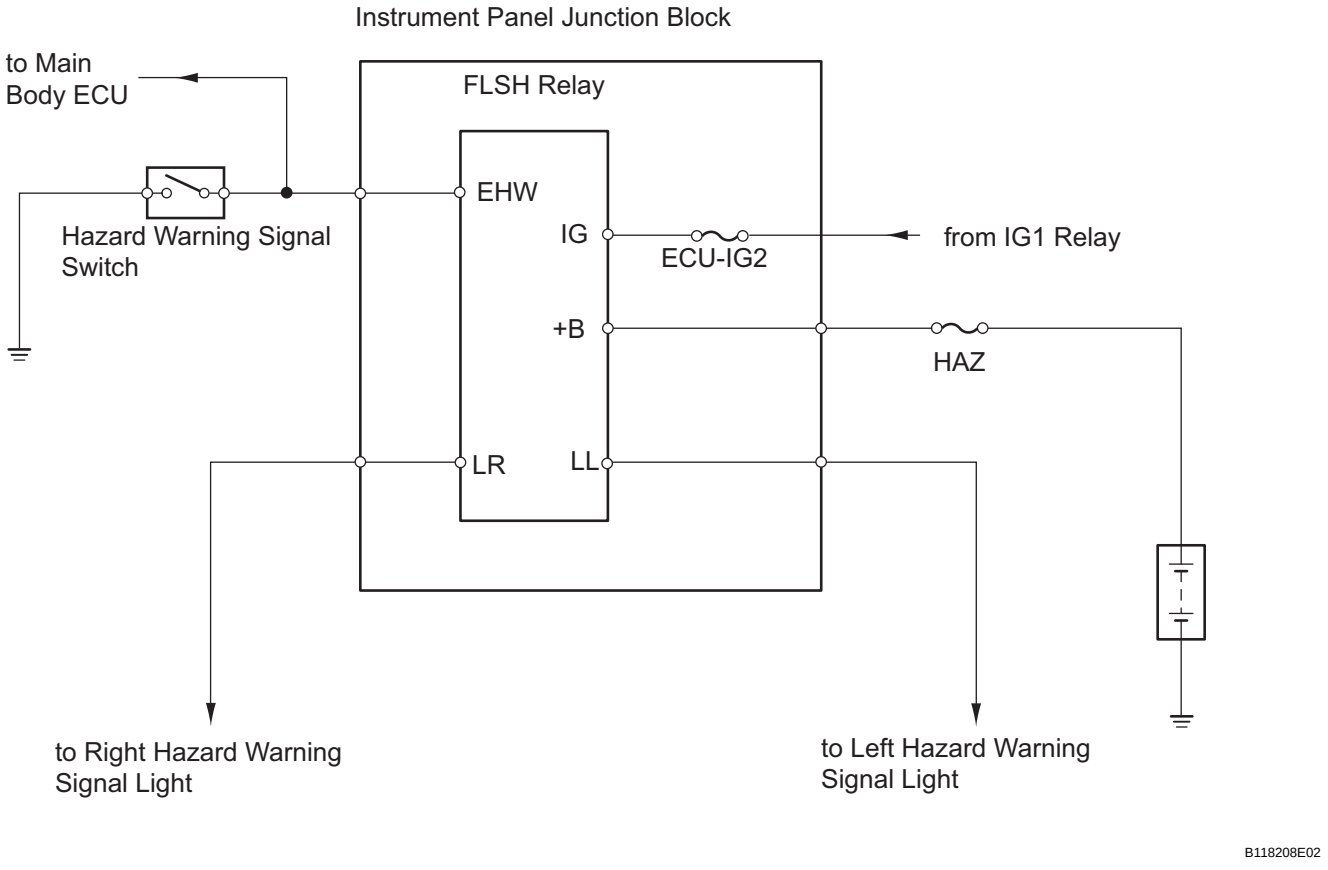
LI

Hazard Warning Switch Circuit

DESCRIPTION

When the hazard warning signal switch is turned on, the turn signal flasher relay (Marking: FLSH) in the main body ECU turns on to flash the hazard warning signal lights.

WIRING DIAGRAM



INSPECTION PROCEDURE

LI

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch ON and press the intelligent tester main switch ON.
(c) Select the item below in the ACTIVE TEST and then check the relay operation.

Main body ECU

Item	Test Details/Display (Range)	Diagnostic Note
HAZARD	HAZARD ON/OFF	-

OK:

All hazard warning signal lights flash.

OK → Go to step 5

NG

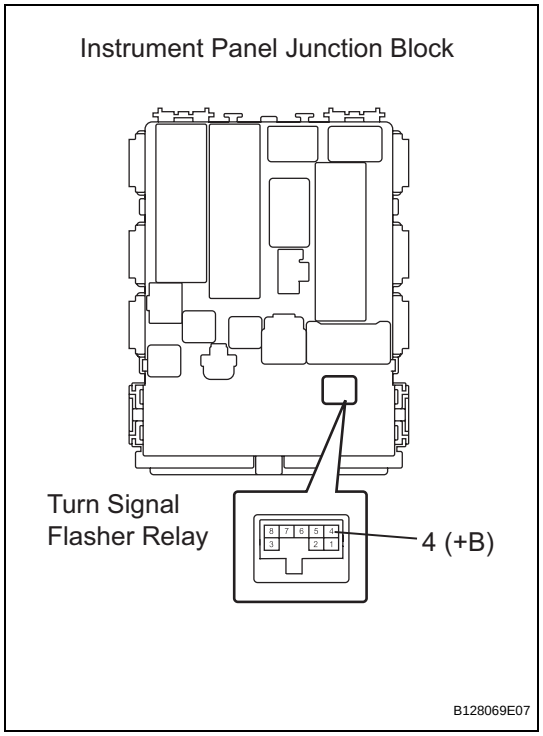
2 INSPECT FUSE (HAZ)

(a) Remove the HAZ fuse from the engine room No. 1 relay block.
(b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

3 CHECK WIRE HARNESS (TURN SIGNAL FLASHER RELAY - BATTERY)



(a) Remove the turn signal flasher relay from the instrument panel junction block.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Specified Condition
Junction Block turn signal flasher Relay terminal 4 (+B) - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

4 CHECK OPERATION OF TURN SIGNAL FLASHER RELAY (Marking: FLSH)

(a) Replace the turn signal flasher relay with a normally functioning one or a new one.
(b) Check that the appropriate turn signal light flashes.
(c) Connect the intelligent tester (with CAN VIM) to the DLC3.
(d) Turn the ignition switch ON and press the intelligent tester main switch ON.

(e) Select the item below in the ACTIVE TEST and then check the relay operation.

Main body ECU

Item	Test Details / Display (Range)	Diagnostic Note
HAZARD	HAZARD ON / OFF	-

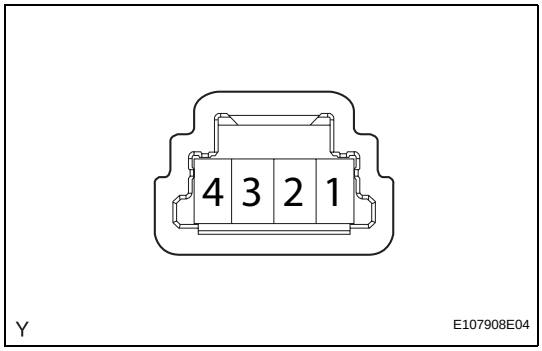
OK:
All hazard warning signal lights flash.

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR (JUNCTION BLOCK - HAZARD WARNING SIGNAL SWITCH)**

OK

REPLACE TURN SIGNAL FLASHER RELAY

5 INSPECT HAZARD WARNING SIGNAL SWITCH



(a) Remove the hazard warning signal switch.
(b) Measure the resistance of the switch.
Standard resistance

Tester Connection	Condition	Specified Condition
1 - 4	OFF	10 kΩ or higher
1 - 4	ON	Below 23.4 Ω

NG → **REPLACE HAZARD WARNING SIGNAL SWITCH**

OK

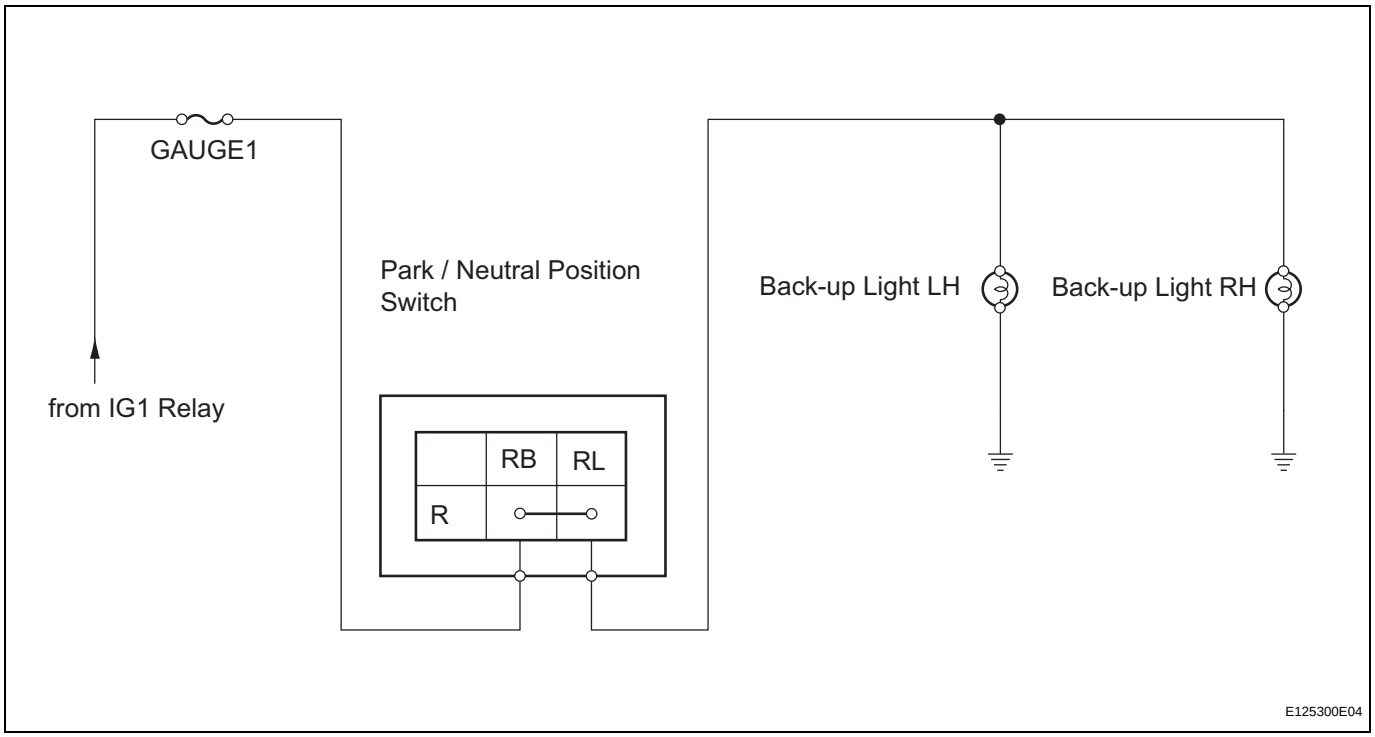
REPAIR OR REPLACE HARNESS AND CONNECTOR (HAZARD WARNING SIGNAL SWITCH - BODY GROUND)

Back-up Light Circuit

DESCRIPTION

The park / neutral position switch turns on when the shift lever is moved into the R position, causing the back-up lights to illuminate.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT FUSE (GAUGE1)

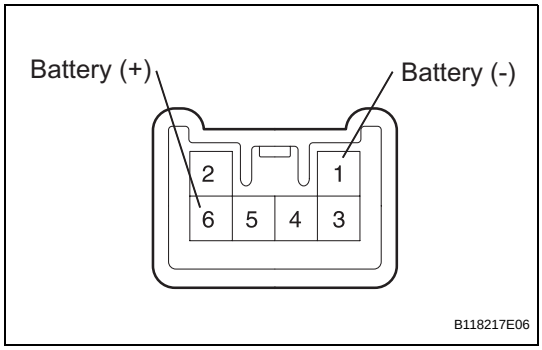
(a) Remove the GAUGE1 fuse from the instrument panel junction block.
(b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

LI

2 INSPECT BACK-UP LIGHT

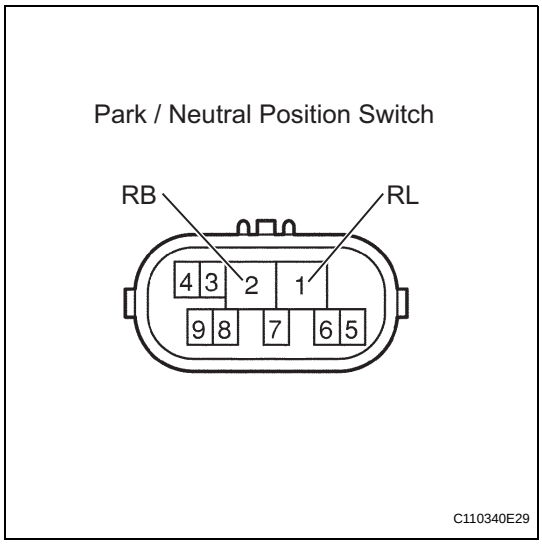


(a) Remove the rear combination light.
(b) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 1, then check that the light comes on.
OK:
Light comes on.

NG → **REPLACE BULB**

OK

3 INSPECT PARK / NEUTRAL POSITION SWITCH



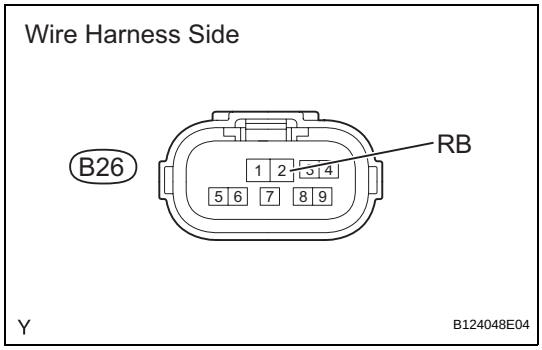
(a) Disconnect the B26 park / neutral position switch connector.
(b) Measure the resistance of the switch.
Standard resistance

Tester Connection	Shift Position	Specified Connection
2 (RB) - 1 (RL)	R	Below 1 Ω
2 (RB) - 1 (RL)	Except R	10 kΩ or higher

NG → **REPLACE PARK / NEUTRAL POSITION SWITCH**

OK

4 CHECK WIRE HARNESS (PARK / NEUTRAL POSITION SWITCH - BATTERY)



(a) Disconnect the B26 park / neutral position switch connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

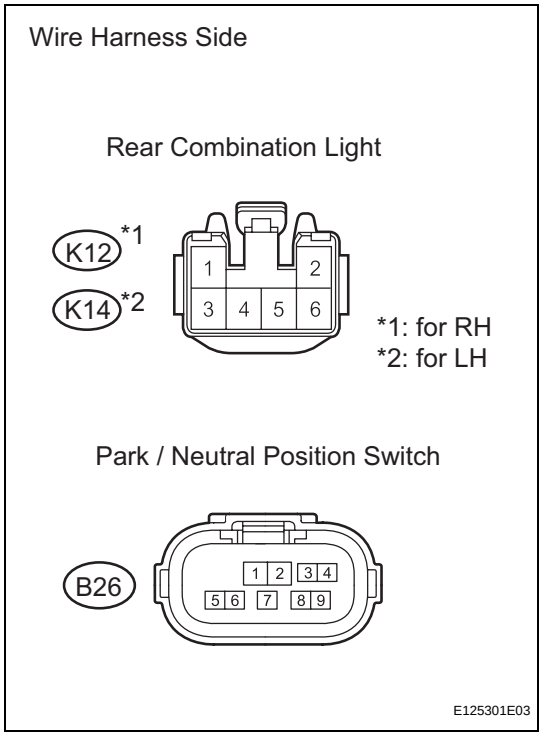
Tester Connection	Condition	Specified Condition
B26-2 (RB) - Body ground	Ignition switch ON	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

LI

5	CHECK WIRE HARNESS (PARK / NEUTRAL POSITION SWITCH - BACK-UP LIGHT)



(a) Disconnect the B26 park / neutral position switch connector.
(b) Disconnect the K12 and K14 rear combination light assembly connectors.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
B26-1 - K12-6	Below 1 Ω
B26-1 or K12-6 - Body ground	10 kΩ or higher
B26-1 - K24-6	Below 1 Ω
B26-1 or K24-6 - Body ground	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

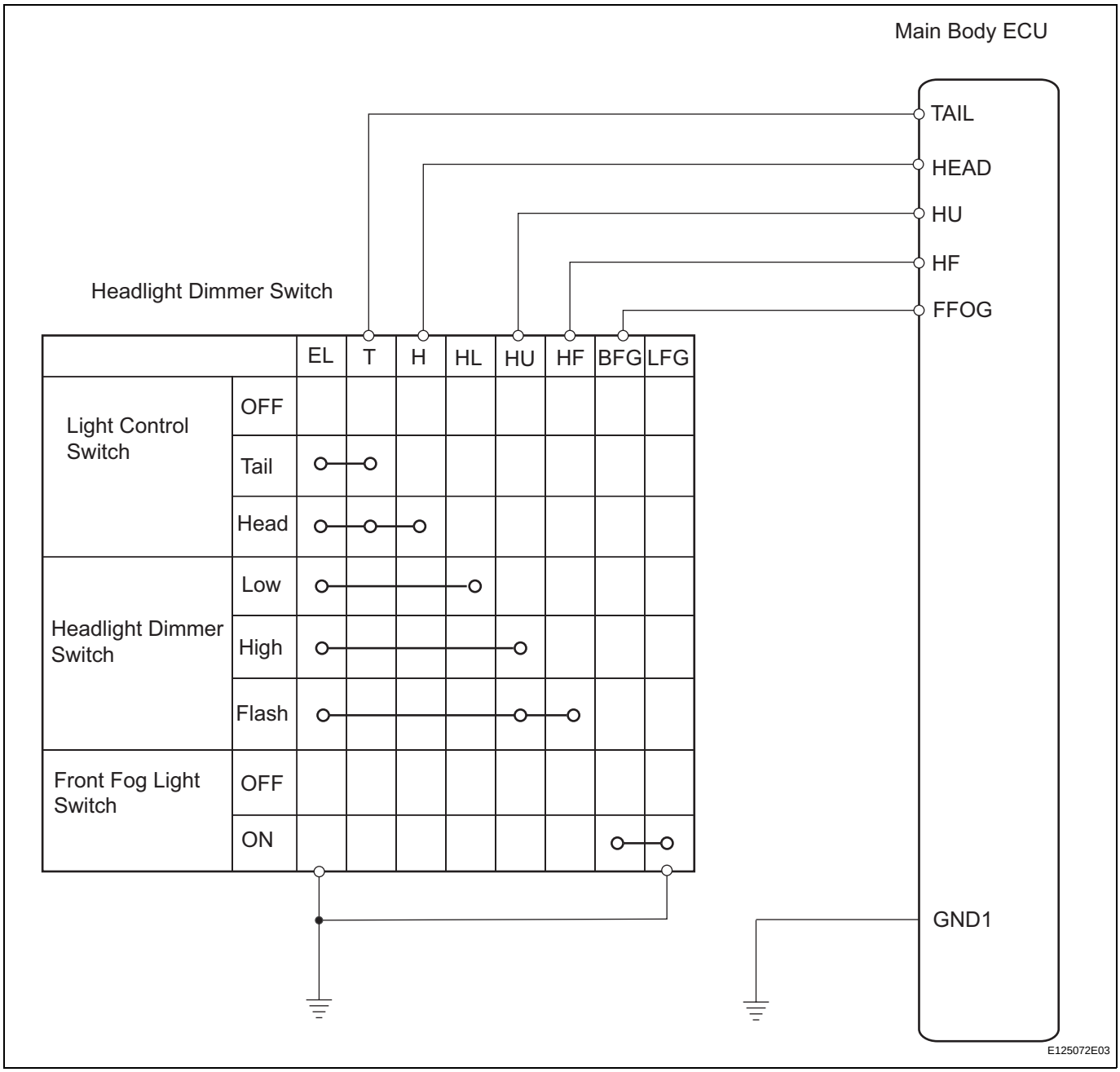
REPAIR OR REPLACE HARNESS AND CONNECTOR (BACK-UP LIGHT - BODY GROUND)

Light Control Switch Circuit

DESCRIPTION

This circuit detects the state of the headlight dimmer switch.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER (MAIN BODY ECU)

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch ON and press the intelligent tester main switch ON.

LI

(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

Main body ECU

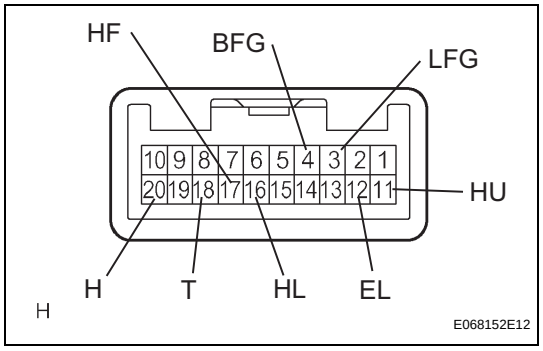
Item	Measurement / Display (Range)	Normal Condition	Diagnostic Note
DIMMER SW	Headlight dimmer switch signal / ON or OFF	ON: Headlight dimmer switch is in HI or FLASH position OFF: Headlight dimmer switch is in LO position	-
PASSING LIGHT SW	Passing light switch signal / ON or OFF	ON: Headlight dimmer switch is in FLASH position OFF: Headlight dimmer switch is in except FLASH position	-
FRONT FOG LIGHT SW	Front fog light switch signal / ON or OFF	ON: Front fog light switch is in ON position OFF: Front fog light switch is in OFF position	-
HEADLIGHT SW	Headlight control switch signal (HEAD) / ON or OFF	ON: Light control switch is in HEAD position OFF: Light control switch is in except HEAD position	-
HEADLIGHT SW (Tail)	Headlight control switch signal (TAIL) / ON or OFF	ON: Light control switch is in TAIL or HEAD position OFF: Light control switch is in except OFF position	-

OK:
ON is displayed on the intelligent tester screen.

OK → **PROCEED TO NEXT INSPECTION PROCEDURE SHOWN IN PROBLEM SYMPTOMS TABLE**

NG

2 INSPECT HEADLIGHT DIMMER SWITCH



(a) Remove the headlight dimmer switch.
(b) Measure the resistance of the switch.

Standard resistance

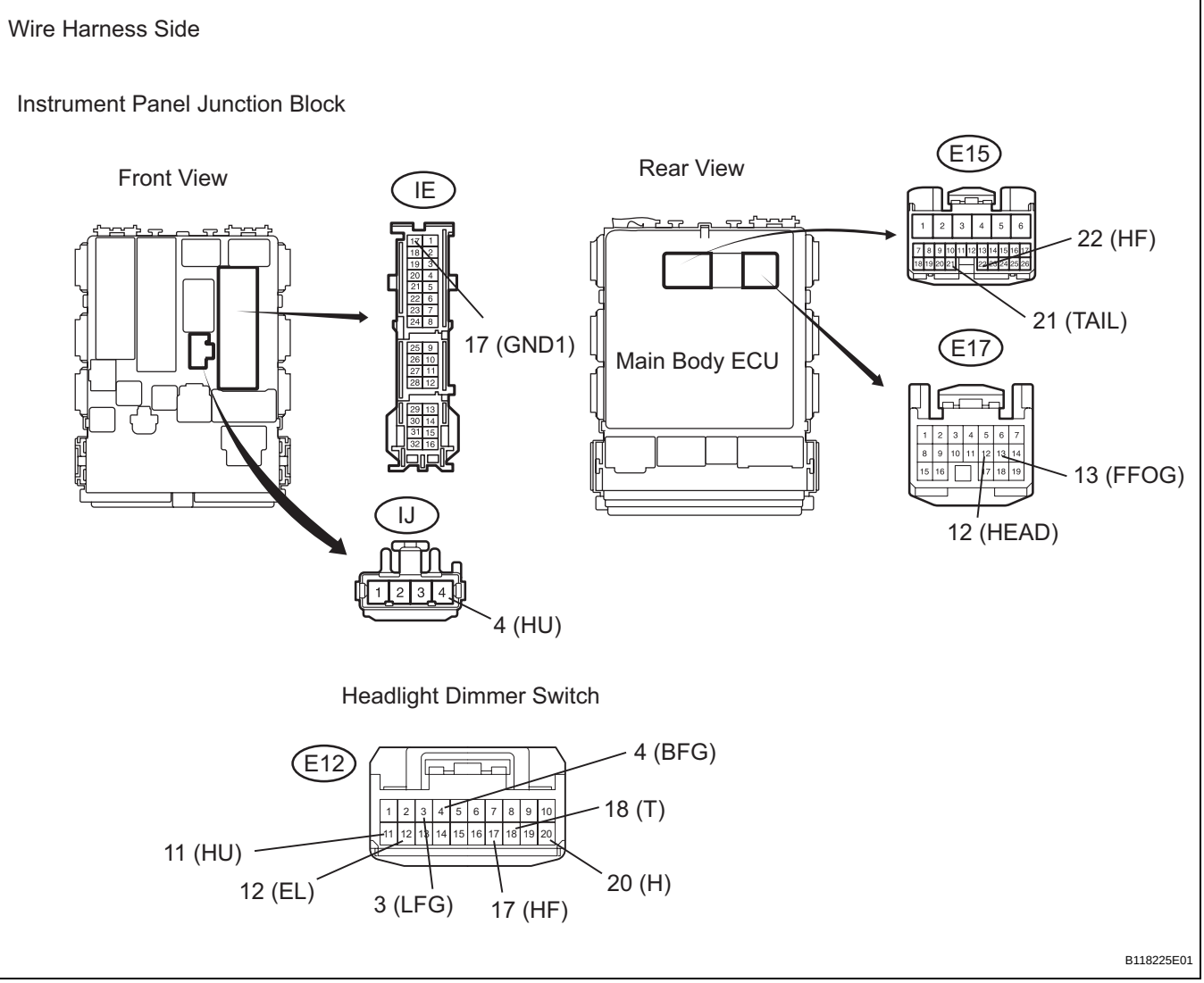
Tester Connection	Condition	Specified Condition
18 (T) - 12 (EL)	OFF	10 kΩ or higher
18 (T) - 12 (EL)	TAIL	Below 1 Ω
20 (H) - 12 (EL)	OFF	10 kΩ or higher
20 (H) - 12 (EL)	HEAD	Below 1 Ω
16 (HL) - 12 (EL)	HIGH or FLASH	10 kΩ or higher
16 (HL) - 12 (EL)	LOW	Below 1 Ω
11 (HU) - 12 (EL)	LOW or FLASH	10 kΩ or higher
11 (HU) - 12 (EL)	HIGH	Below 1 Ω
17 (HF) - 12 (EL)	LOW or HIGH	10 kΩ or higher
17 (HF) - 12 (EL)	FLASH	Below 1 Ω
4 (BFG) - 3 (LFG)	Fog light switch OFF	10 kΩ or higher
4 (BFG) - 3 (LFG)	Fog light switch ON	Below 1 Ω

NG → **REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY**

LI

OK

3	CHECK WIRE HARNESS (MAIN BODY ECU - DIMMER SWITCH AND BODY GROUND)



(a) Disconnect the E12 headlight dimmer switch connector.
(b) Disconnect the IE and IJ instrument panel junction block connectors.
(c) Disconnect the E15 and E17 main body ECU connectors.
(d) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
E15-22 (HF) - E12-17 (HF)	Below 1 Ω
E15-22 (HF) or E12-17 (HF) - Body ground	10 kΩ or higher
E15-21 (TAIL) - E12-18 (T)	Below 1 Ω
E15-21 (TAIL) or E12-18 (T) - Body ground	10 kΩ or higher
E17-12 (HEAD) - E12-20 (H)	Below 1 Ω

LI

Tester Connection	Specified Condition
E17-12 (HEAD) or E12-20 (H) - Body ground	10 kΩ or higher
E17-13 (FFOG) - E12-4 (BFG)	Below 1 Ω
E17-13 (FFOG) or E12-4 (BFG) - Body ground	10 kΩ or higher
IJ-4 (HU) - E12-11 (HU)	Below 1 Ω
IJ-4 (HU) or E12-11 (HU) - Body ground	10 kΩ or higher
E12-12 (EL) - Body ground	Below 1 Ω
E12-3 (LFG) - Body ground	Below 1 Ω
IE-17 (GND1) - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

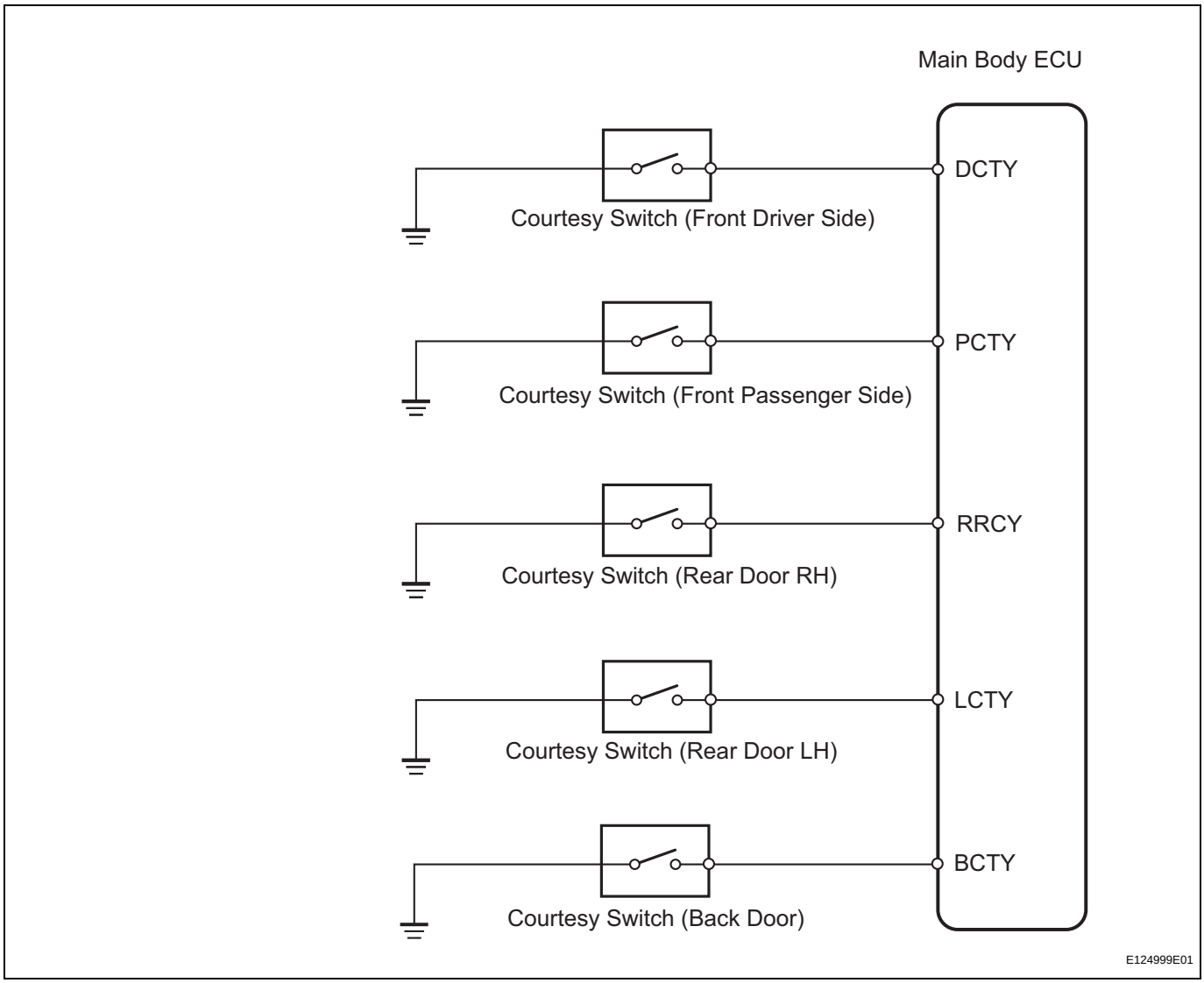
REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

Door Courtesy Switch Circuit

DESCRIPTION

The main body ECU detects the condition of the door courtesy switch.

WIRING DIAGRAM



LI

INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER (DOOR COURTESY LIGHT SWITCH)

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

Main body ECU

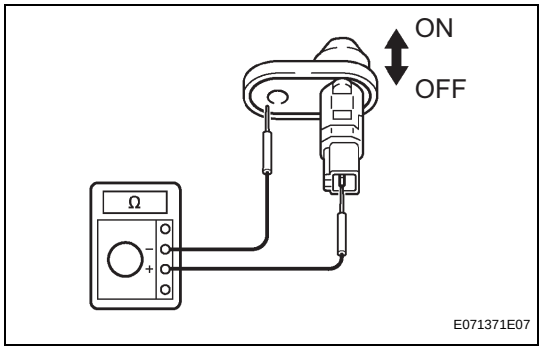
Item	Measurement Item/Display (Range)	Normal Condition	Diagnostic Note
D DOR CTY SW	Driver's door courtesy switch signal/ON or OFF	ON: Driver side door is open OFF: Driver side door is closed	-
P DOR CYT SW	Passenger's door courtesy switch signal/ON or OFF	ON: Front passenger side door is open OFF: Front passenger door is closed	-
RR DOR CTY SW	Rear door courtesy switch signal/ON or OFF	ON: Rear right passenger side door is open OFF: Rear right passenger side door is closed	-
RL DOR CTY SW	Rear door courtesy switch signal/ON or OFF	ON: Rear left passenger side door is open OFF: Rear left passenger side door is closed	-
BK DOR CTY SW	Back door courtesy switch signal/ON or OFF	ON: Back door is open OFF: Back door is closed	-

OK:
Condition sign can be displayed.

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

NG

2 INSPECT COURTESY LIGHT SWITCH



(a) Remove the door courtesy light switch.
(b) Measure the resistance of the switch.
Standard resistance:
Front LH, Front RH, Rear LH, Rear RH, Back Door

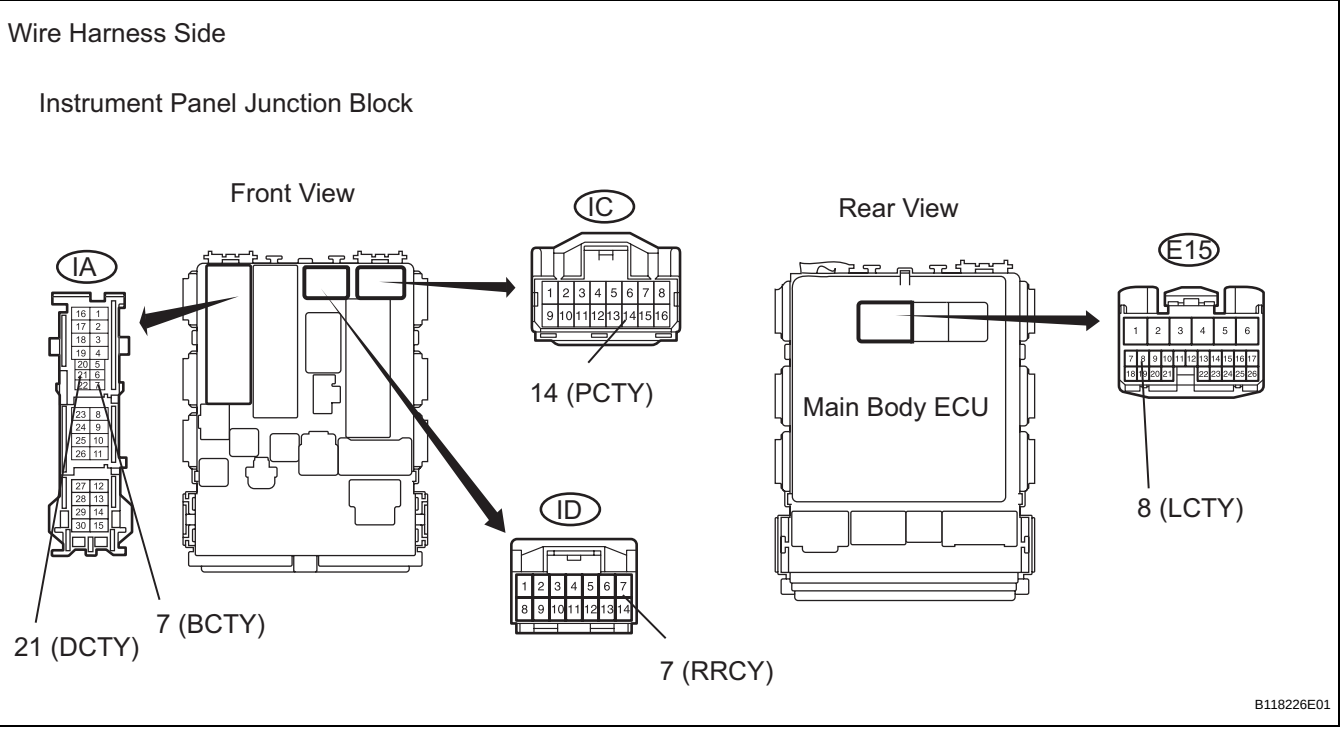
Tester Connection	Condition	Specified Condition
1 - Body ground	OFF	10 kΩ or higher
	ON	Below 1 Ω

NG → **REPLACE DOOR COURTESY LIGHT SWITCH**

OK

LI

3	CHECK WIRE HARNESS (MAIN BODY ECU - COURTESY LIGHT SWITCH)



(a) Connect the courtesy light switch.
(b) Disconnect the IA, IC and ID instrument panel junction block connectors.
(c) Disconnect the E15 main body ECU connector.
(d) Measure the resistance of the wire harness side connectors.

Standard resistance:

Front door LH

Tester Connection	Condition	Specified Condition
IA-21 (DCTY) - Body ground	Front LH door is opened	Below 1 Ω
	Front LH door is closed	10 kΩ or higher

Front door RH

Tester Connection	Condition	Specified Condition
IC-14 (PCTY) - Body ground	Front RH door is opened	Below 1 Ω
	Front RH door is closed	10 kΩ or higher

Rear door RH

Tester Connection	Condition	Specified Condition
ID-7 (RRCY) - Body ground	Rear RH door is opened	Below 1 Ω
	Rear RH door is closed	10 kΩ or higher

Rear door LH

Tester Connection	Condition	Specified Condition
E15-8 (LCTY) - Body ground	Rear LH door is opened	Below 1 Ω
	Rear LH door is closed	10 kΩ or higher

Back door

Tester Connection	Condition	Specified Condition
IA-7 (BCTY) - Body ground	Back door is opened	Below 1 Ω
	Back door is closed	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

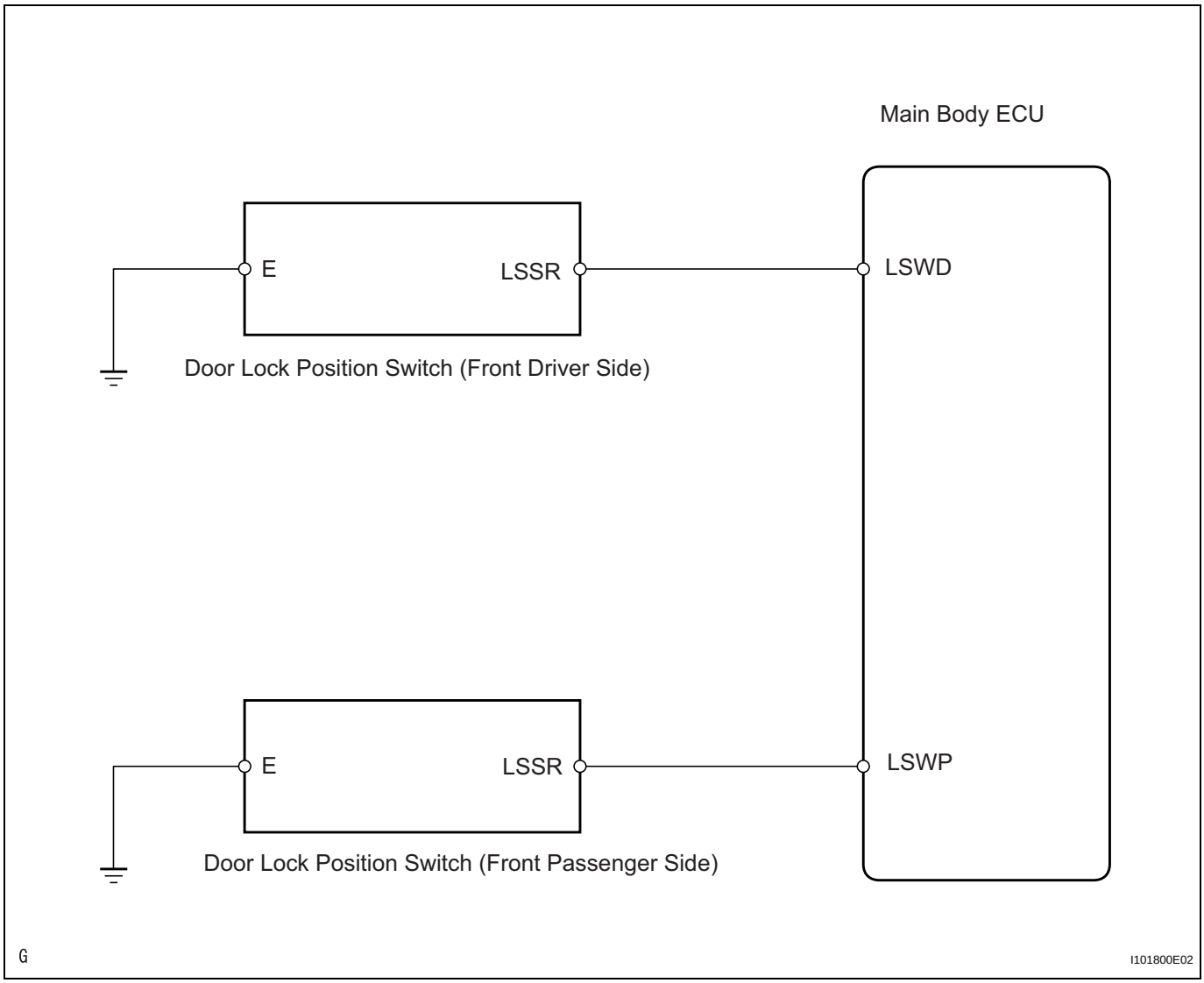
REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

Door LOCK Position Circuit

DESCRIPTION

This circuit detects the state of the door lock detection sensor and sends it to the main body ECU.

WIRING DIAGRAM



LI

INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER (DOOR LOCK POSITION)

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the DATA LIST, and read the displays on the intelligent tester.

Main body ECU

Item	Measurement item/Display (Range)	Normal Condition	Diagnostic Note
D LOCK POS SW	Driver's door lock position switch signal/ON or OFF	ON: Door lock is in unlock position OFF: Door lock is in lock position	-
P LOCK POS SW	Front passenger's door lock position switch signal/ON or OFF	ON: Front passenger's door lock is in unlock position OFF: Front passenger's door lock is in lock position	-

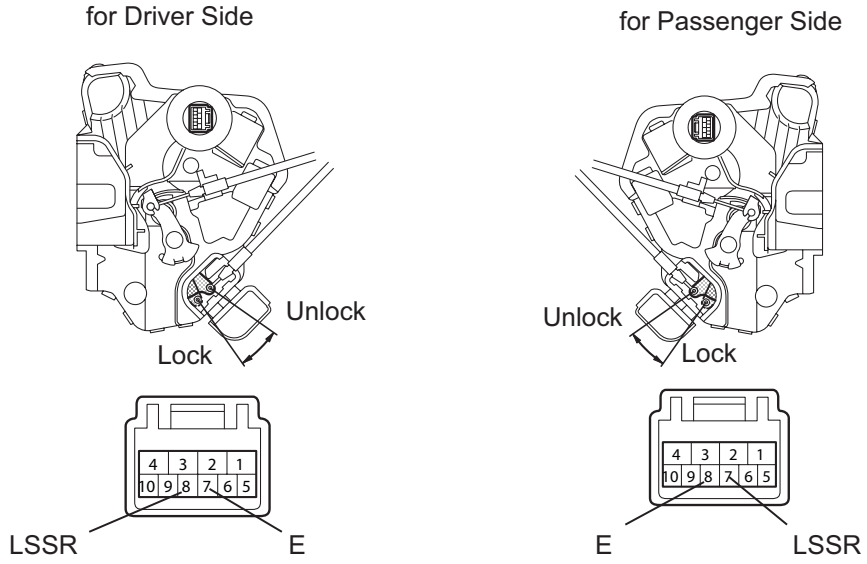
OK:
Condition sign can be displayed.

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

NG

2 INSPECT FRONT DOOR LOCK

Door Lock



B128041E01

(a) Remove the front door lock (driver side or passenger side).
(b) Measure the resistance of the door lock.
Standard resistance:
Front door lock (for Driver Side)

Tester Connection	Condition	Specified Condition
8 (LSSR) - 7 (E)	LOCK	Below 1 Ω
	UNLOCK	10 kΩ or higher

Front door lock (for Passenger Side)

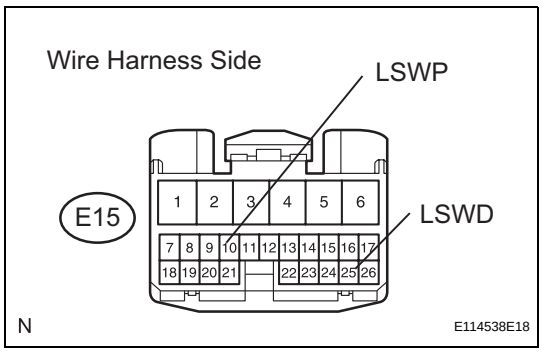
LI

Tester Connection	Condition	Specified Condition
7 (LSSR) - 8 (E)	LOCK	Below 1 Ω
	UNLOCK	10 kΩ or higher

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY**

OK

3 CHECK WIRE HARNESS (MAIN BODY ECU - DOOR LOCK AND BODY GROUND)



(a) Disconnect the E15 main body ECU connector.
(b) Measure the resistance of the wire harness side connector.

Standard resistance:

Front door lock (for Driver Side)

Tester Connection	Condition	Specified Condition
E15-25 (LSWD) - Body ground	LOCK	Below 1 Ω
	UNLOCK	10 kΩ or higher

Front door lock (for Passenger Side)

Tester Connection	Condition	Specified Condition
E15-10 (LSWP) - Body ground	LOCK	Below 1 Ω
	UNLOCK	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

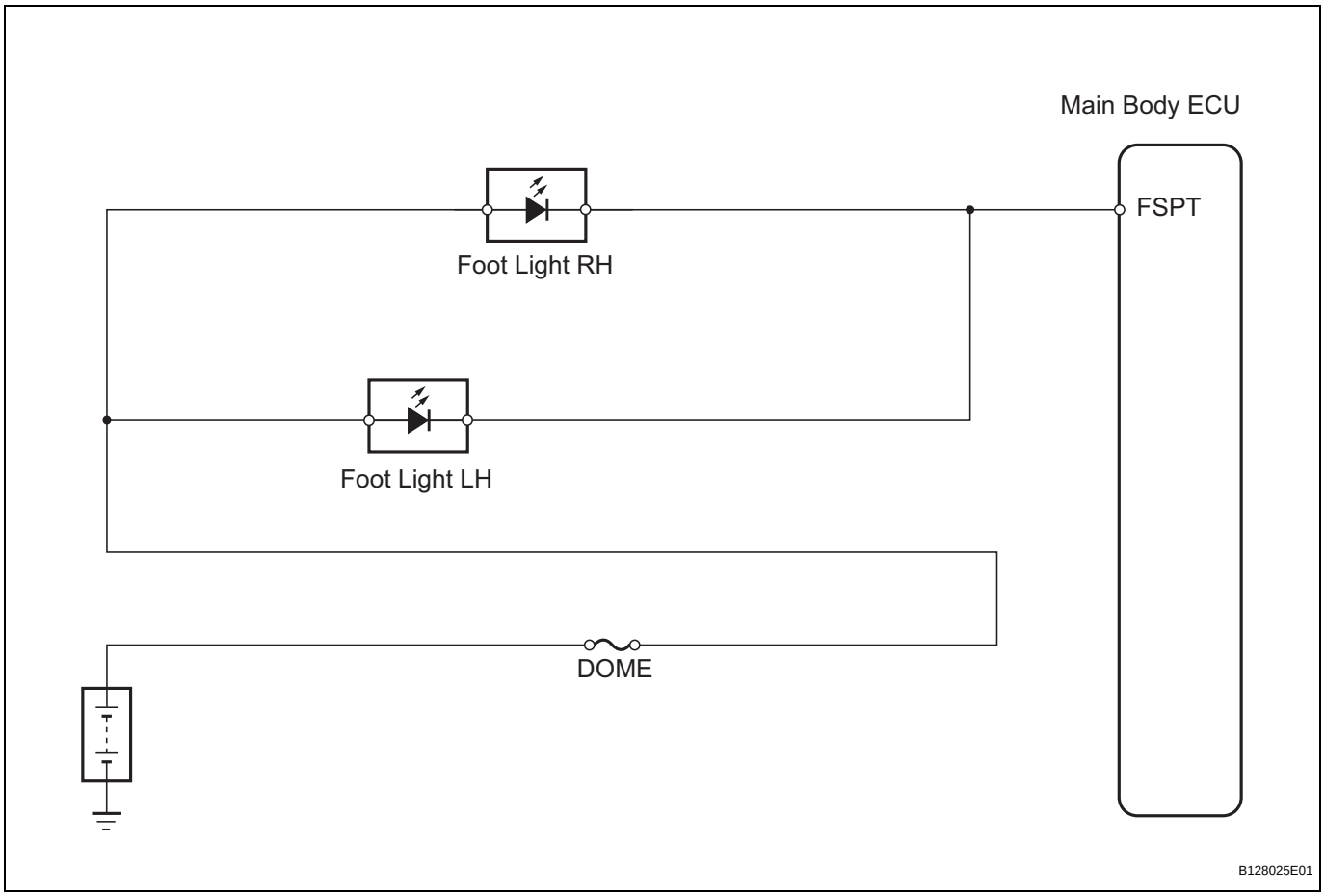
REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

Footwell Light Circuit

DESCRIPTION

The main body ECU receives information regarding the door lock position switch and ignition switch, and turns on each foot light.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER (MAIN BODY ECU)

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the ACTIVE TEST and then check the relay operation.

Main body ECU

Item	Test Details	Diagnostic Note
STEP LIGHT	Foot light ON/OFF	-

OK:
Light comes on.

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

NG

2 INSPECT FUSE (DOME)

(a) Remove the DOME fuse from the engine room No. 2 relay block.
(b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

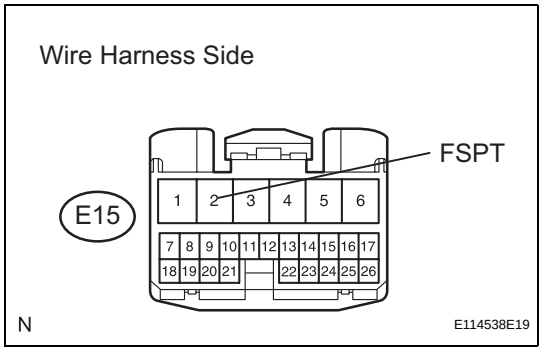
3 INSPECT FOOT LIGHT

(a) Remove the foot light.
(b) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the light comes on.
OK:
Light comes on.

NG → **REPLACE FOOT LIGHT ASSEMBLY**

OK

4 CHECK WIRE HARNESS (BATTERY - MAIN BODY ECU)



(a) Install the foot light.
(b) Disconnect the E15 main body ECU connector.
(c) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Specified Condition
E15-2 (FSPT) - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK (MAIN BODY ECU)

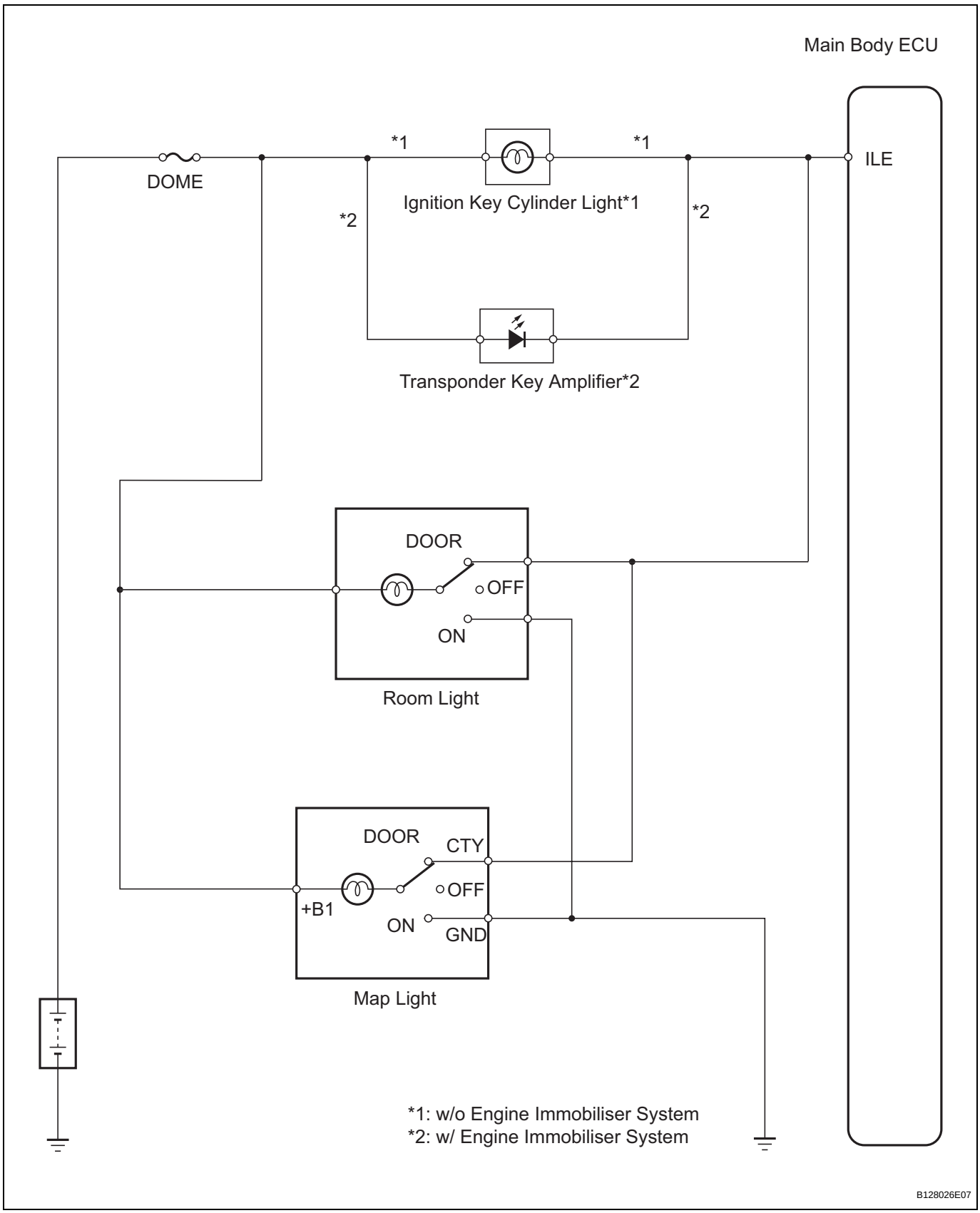
LI

Illumination Circuit

DESCRIPTION

The main body ECU receives information regarding the door courtesy switch and door lock position switch, and turns on the room light.

WIRING DIAGRAM



INSPECTION PROCEDURE

1	PERFORM ACTIVE TEST BY INTELLIGENT TESTER (MAIN BODY ECU)

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch to the ON position and press the intelligent tester main switch ON.
(c) Select the items below in the ACTIVE TEST and then check the main body ECU operation.

Main body ECU

Item	Test Details	Diagnostic Note
ILLUMI OUTPUT	Test Details: Turn interior light and key illumination ON/OFF Vehicle Condition: Interior light SW is in DOOR position and all doors are closed	-

OK:
Light comes on.

OK → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

NG

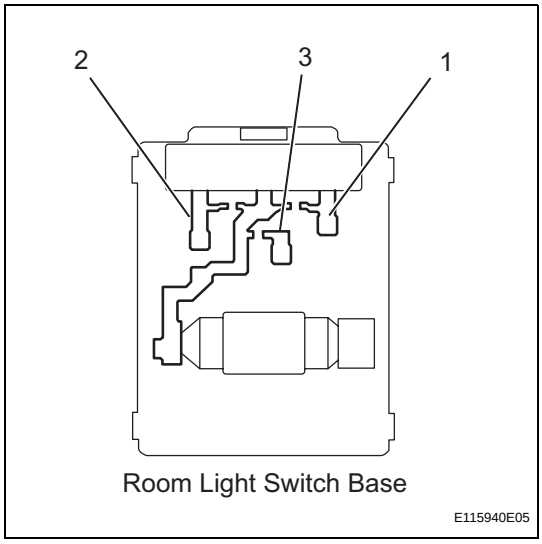
2	INSPECT FUSE (DOME)

(a) Remove the DOME fuse from the engine room No. 2 relay block.
(b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG → **REPLACE FUSE**

OK

3 INSPECT ROOM LIGHT ASSEMBLY



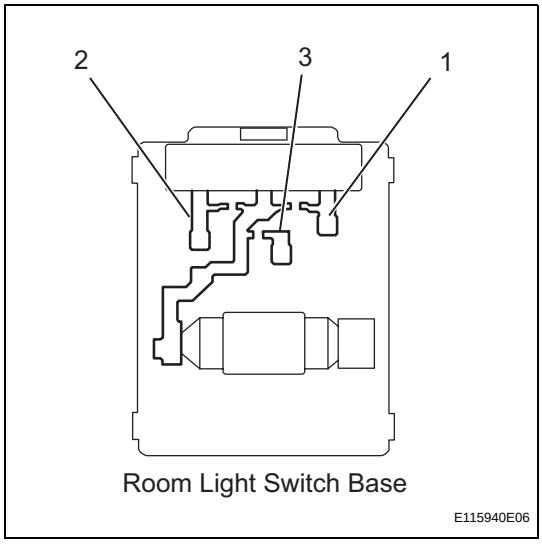
(a) Remove the room light assembly.
(b) Measure the resistance of the room light switch base.
Standard resistance

Tester Connection	Switch Condition	Specified Condition
1 - 2 1 - 3	OFF	10 kΩ or higher
1 - 2	DOOR	Below 1 Ω
1 - 3	ON	Below 1 Ω

NG → **REPLACE ROOM LIGHT ASSEMBLY**

OK

4 INSPECT ROOM LIGHT BULB

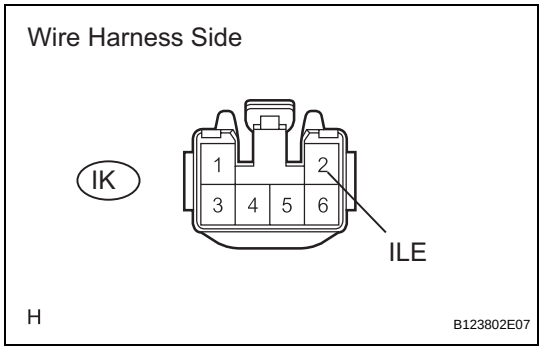


(a) Remove the room light assembly.
(b) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 2, then check that the light comes on when the switch is in the DOOR position.
OK:
Light comes on.
(c) Connect the positive (+) lead from the battery to terminal 1 and the negative (-) lead to terminal 3, then check that the light comes on when the switch is in the ON position.
OK:
Light comes on.

NG → **REPLACE BULB**

OK

5 CHECK HARNESS AND CONNECTOR (BATTERY - ROOM LIGHT AND MAIN BODY ECU)



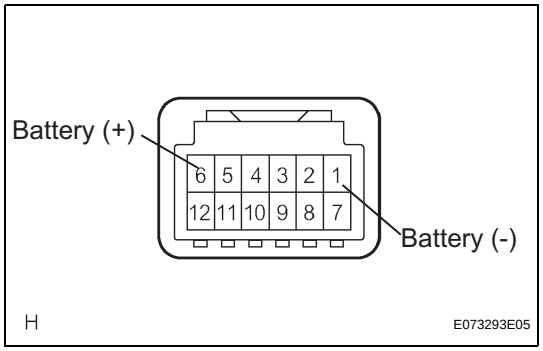
(a) Disconnect the IK instrument panel junction block connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Condition	Specified Condition
IK-2 (ILE) - Body ground	Room light switch in DOOR position	10 to 14 V

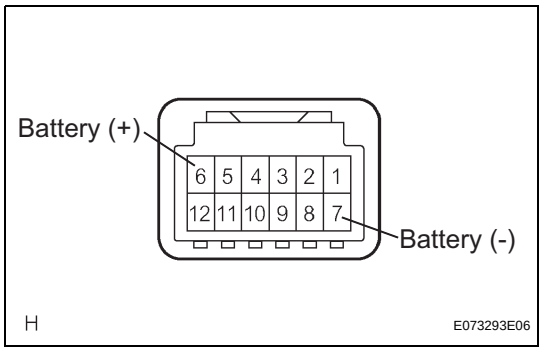
NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

6 INSPECT MAP LIGHT BULB



(a) Remove the map light assembly.
(b) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 1, then check that the light comes on when the switch is in the DOOR position.
OK:
Light comes on.



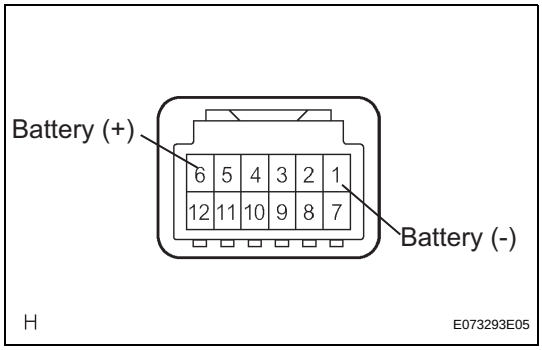
(c) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 7, then check that the light comes on when the switch is in the ON position.
OK:
Light comes on.

OK → **Go to step 8**

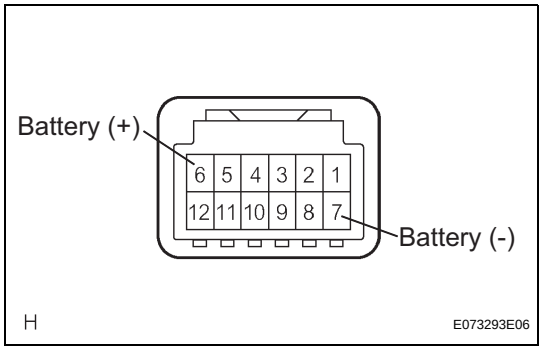
NG

LI

7 INSPECT MAP LIGHT



(a) Replace the map light bulb with a normally functioning one or a new one.
(b) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 1, then check that the light comes on when the switch is in the DOOR position.
OK:
Light comes on.



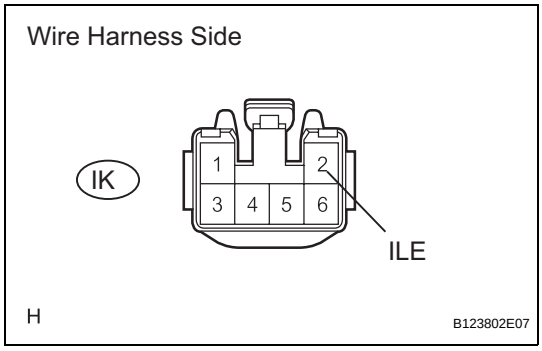
(c) Connect the positive (+) lead from the battery to terminal 6 and the negative (-) lead to terminal 7, then check that the light comes on when the switch is in the ON position.
OK:
Light comes on.

NG → **REPLACE MAP LIGHT ASSEMBLY**

OK →

REPLACE MAP LIGHT BULB

8 CHECK WIRE HARNESS (BATTERY - MAP LIGHT AND MAIN BODY ECU)



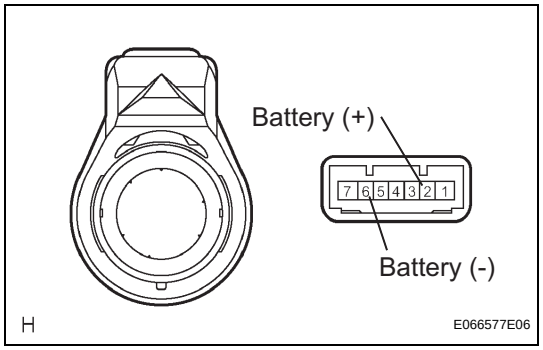
(a) Disconnect the IK instrument panel junction block connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Condition	Specified Condition
IK-2 (ILE) - Body ground	Room light switch in DOOR position	10 to 14 V

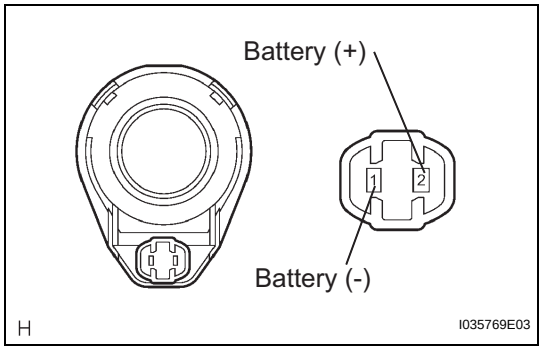
NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK →

9 INSPECT IGNITION KEY CYLINDER LIGHT



(a) w/ Engine Immobiliser System
  (1) Remove the transponder key amplifier (ignition key cylinder light).
  (2) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 6, then check that the light comes on.
  OK:
  Light comes on.

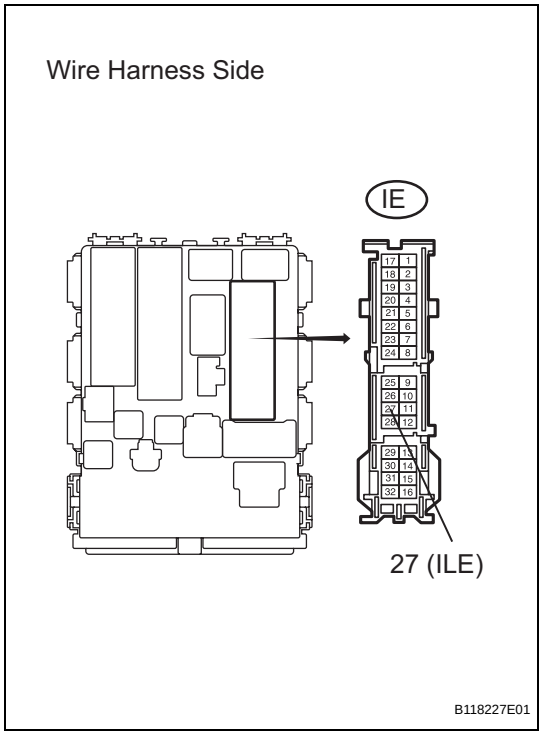


(b) w/o Engine Immobiliser System
  (1) Remove the ignition key cylinder light.
  (2) Connect the positive (+) lead from the battery to terminal 2 and the negative (-) lead to terminal 1, then check that the light comes on.
  OK:
  Light comes on.

NG → **REPLACE IGNITION KEY CYLINDER LIGHT**

OK

10 CHECK WIRE HARNESS (BATTERY - MAIN BODY ECU)



(a) Disconnect the IE instrument panel junction block connector.
(b) Measure the voltage of the wire harness side connector.

Tester Connection	Specified Condition
IE-27 (ILE) - Body ground	10 to 14 V

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

LI

OK

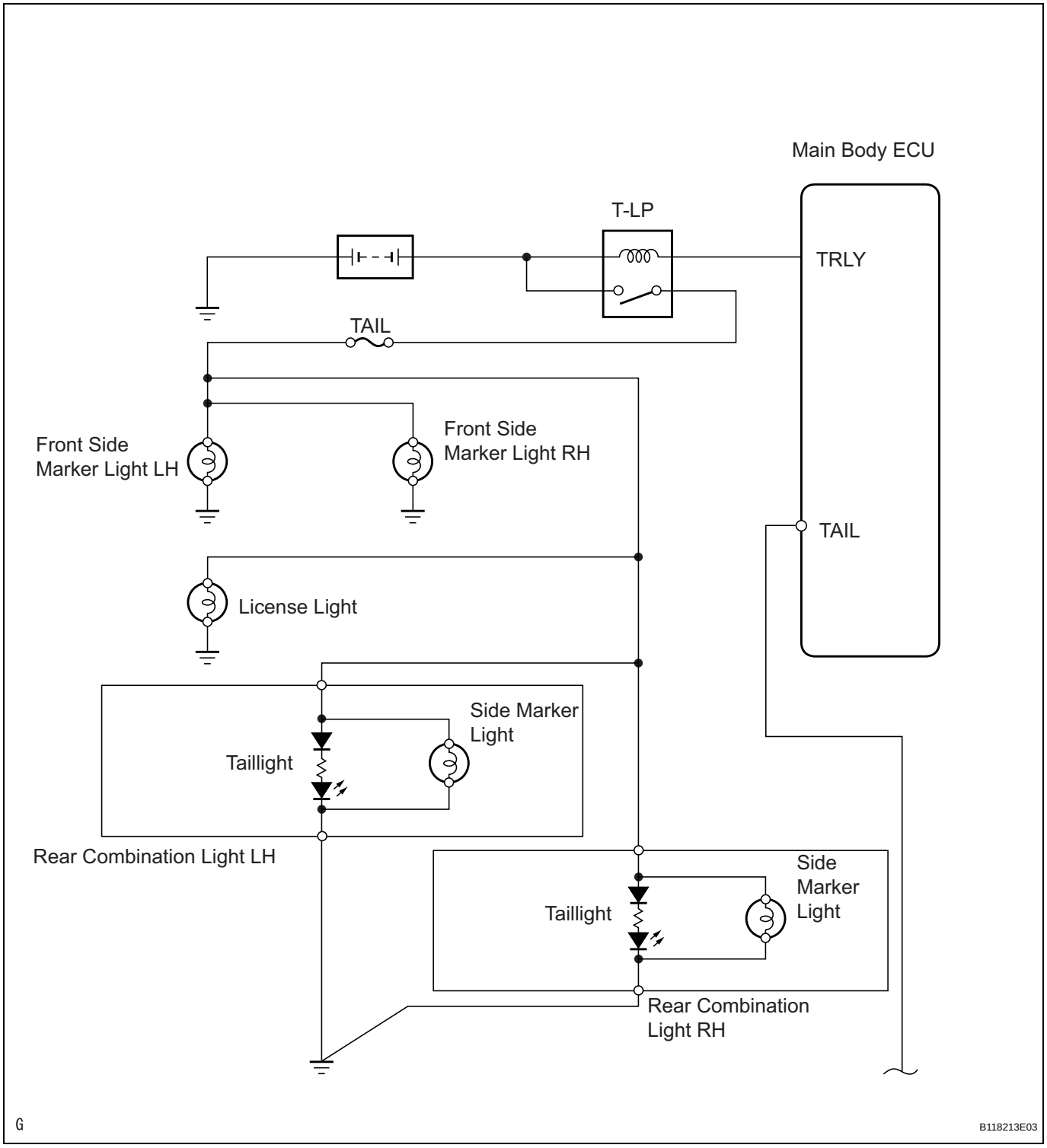
REPLACE INSTRUMENT PANEL JUNCTION BLOCK

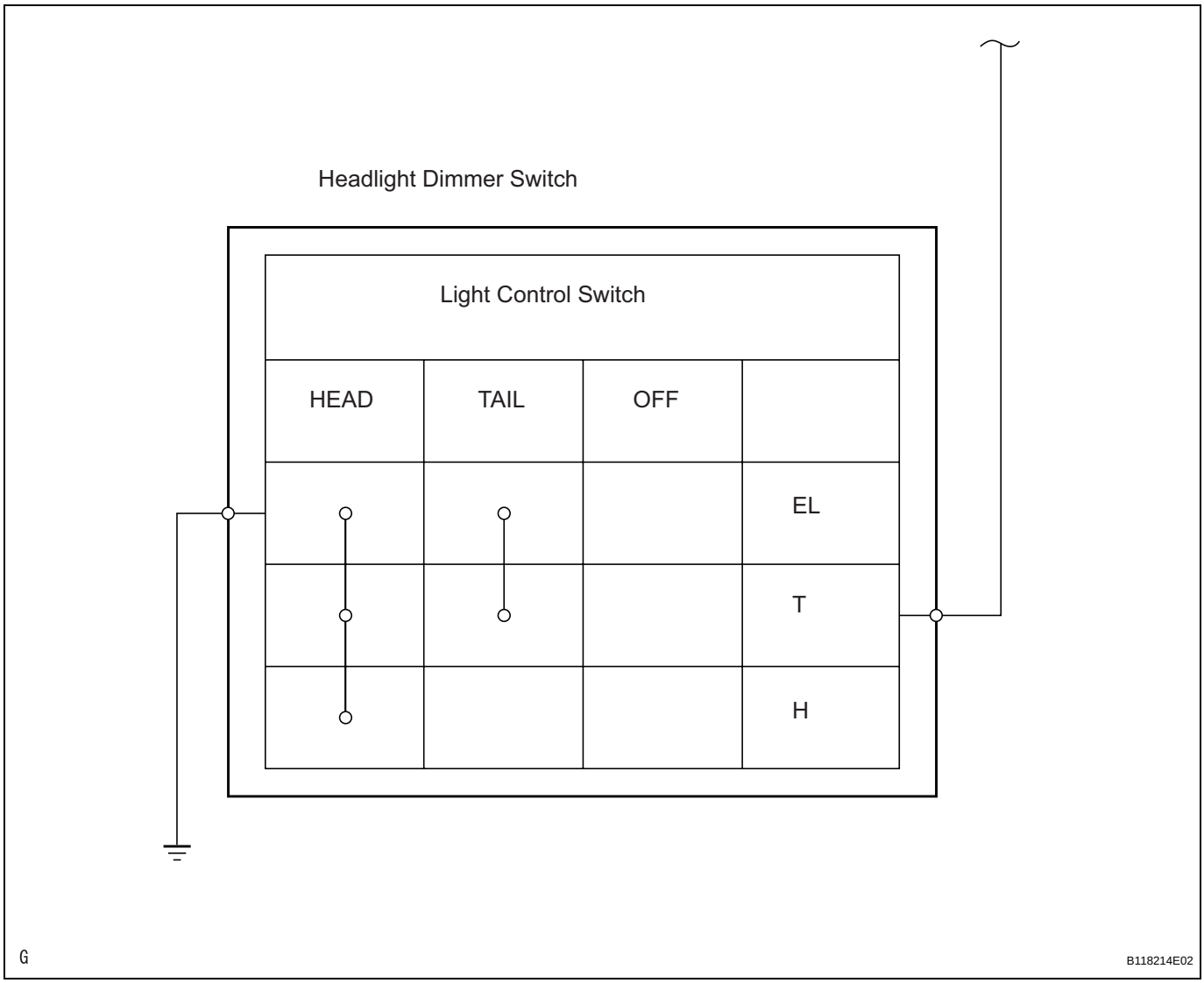
Taillight Relay Circuit

DESCRIPTION

When the light control switch, located on the headlight dimmer switch, is turned to the TAIL position, the taillight relay (Marking: T-LP) turns on to illuminate the front side marker lights, rear taillights, side marker lights and license plate light.

WIRING DIAGRAM





INSPECTION PROCEDURE

1	CHECK WHETHER LIGHTS ILLUMINATE

LI

(a) Check whether the following lights illuminate: front side marker lights, rear taillights, side marker lights and license plate light.

Result

Result	Proceed to
All lights do not illuminate	A
Front side marker lights do not illuminate	B
Rear taillights do not illuminate	C
License plate light does not illuminate	D
Rear side marker light do not illuminate.	E

B	Go to step 8
C	Go to step 10

D	Go to step 11
E	Go to step 12

A

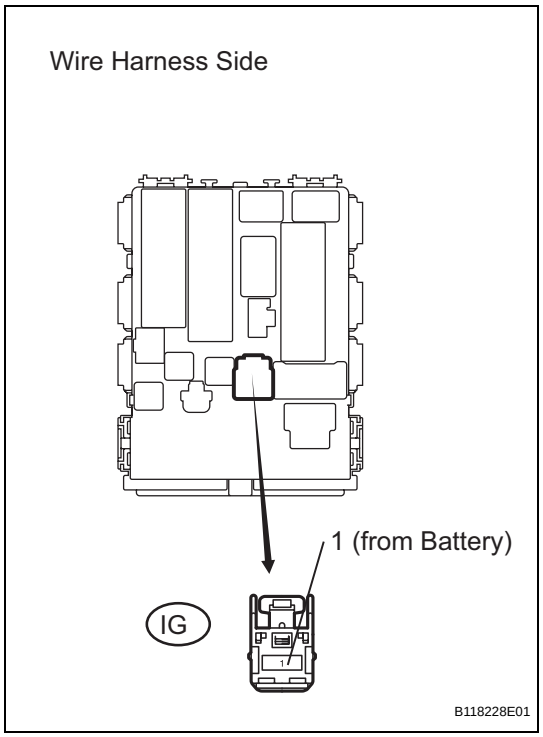
2	INSPECT FUSE (TAIL)

(a) Remove the TAIL fuse from the instrument panel junction block.
(b) Measure the resistance of the fuse.
Standard resistance:
Below 1 Ω

NG	REPLACE FUSE

OK

3	CHECK WIRE HARNESS (BATTERY - INSTRUMENT PANEL JUNCTION BLOCK)



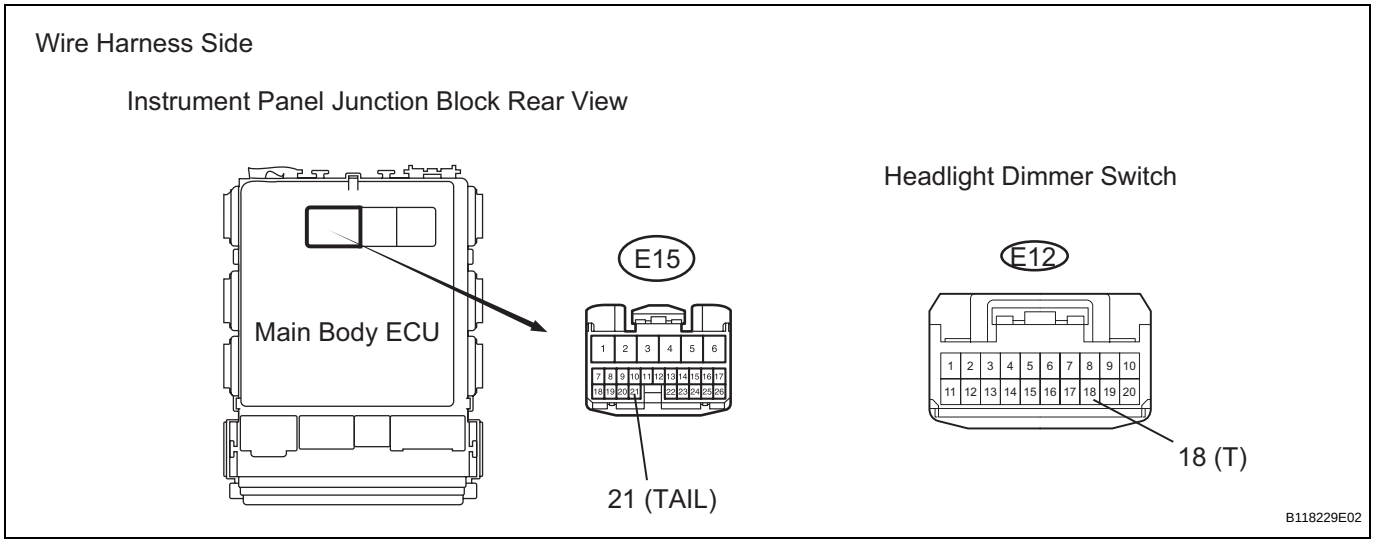
(a) Disconnect the IG instrument panel junction block connector.
(b) Measure the voltage of the wire harness side connector.
Standard voltage

Tester Connection	Specified Condition
IG-1 - Body ground	10 to 14 V

NG	REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

4	CHECK WIRE HARNESS (MAIN BODY ECU - HEADLIGHT DIMMER SWITCH)



(a) Disconnect the E15 main body ECU connector.
(b) Disconnect the E12 headlight dimmer switch connector.
(c) Measure the resistance of the wire harness side connectors.

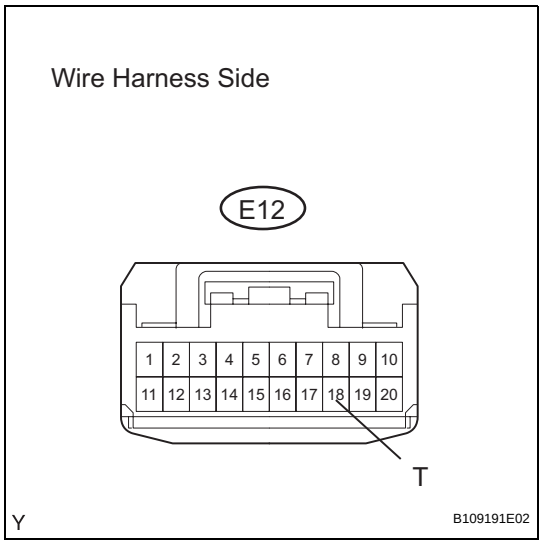
Standard resistance

Tester Connection	Specified Condition
E15-21 (TAIL) - E12-18 (T)	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

5	CHECK WIRE HARNESS (BATTERY - HEADLIGHT DIMMER SWITCH)



(a) Connect the E15 main body ECU connector.
(b) Disconnect the E12 headlight dimmer switch connector.
(c) Measure the voltage of the wire harness side connector.

Standard voltage

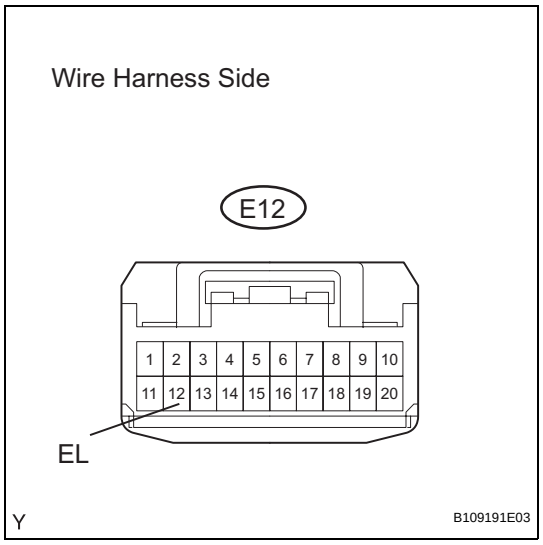
Tester Connection	Specified Condition
E12-18 (T) - Body ground	10 to 14 V

NG → **REPLACE INSTRUMENT PANEL JUNCTION BLOCK**

LI

OK

6 CHECK WIRE HARNESS (HEADLIGHT DIMMER SWITCH - BODY GROUND)



(a) Disconnect the E12 headlight dimmer switch connector.
(b) Measure the resistance of the wire harness side connector.

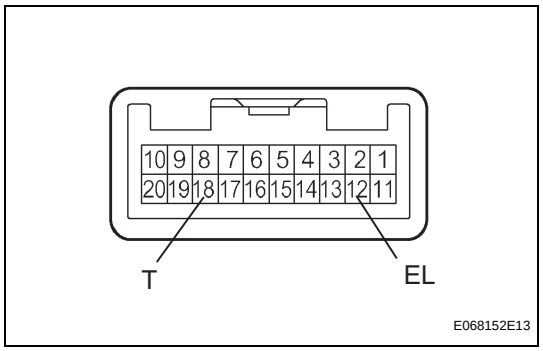
Standard resistance

Tester Connection	Specified Condition
E12-12 (EL) - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

7 INSPECT HEADLIGHT DIMMER SWITCH



(a) Remove the headlight dimmer switch.
(b) Measure the resistance of the switch.

Standard resistance

Tester Connection	Condition	Specified Condition
18 (T) - 12 (EL)	OFF	10 kΩ or higher
18 (T) - 12 (EL)	TAIL	Below 1 Ω

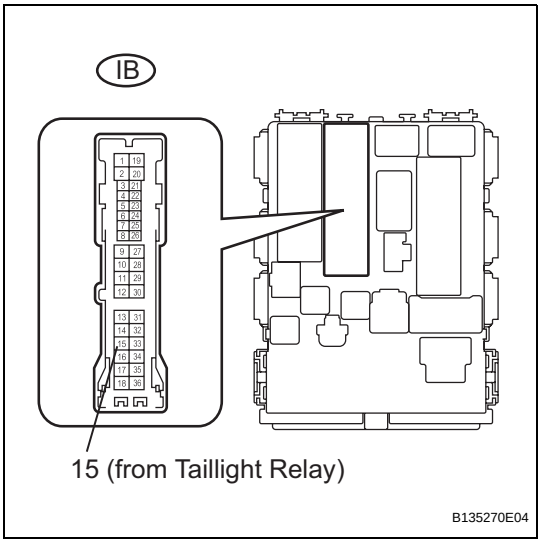
NG → **REPLACE HEADLIGHT DIMMER SWITCH**

OK

REPLACE INSTRUMENT PANEL JUNCTION BLOCK

LI

8	CHECK INSTRUMENT PANEL JUNCTION BLOCK (TAILLIGHT RELAY)



(a) Disconnect the IB instrument panel junction block connector.
(b) Measure the voltage of the junction block.

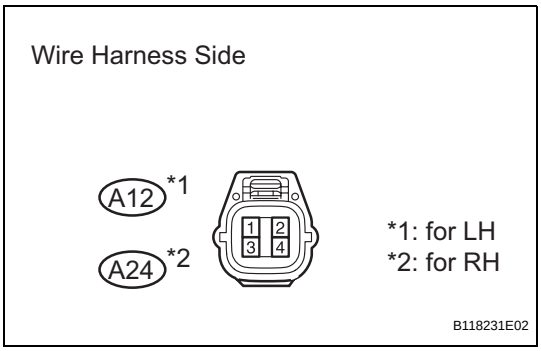
Standard voltage

Tester Connection	Condition	Specified Condition
Junction block IB terminal 15 - Body ground	Light control switch TAIL	10 to 14 V

NG → **REPLACE INSTRUMENT PANEL JUNCTION BLOCK**

OK

9	CHECK WIRE HARNESS (TAILLIGHT RELAY - FRONT SIDE MARKER LIGHT AND BODY GROUND)



(a) Disconnect the A12 and A24 front side marker light connectors.
(b) Measure the voltage and resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Condition	Specified Condition
A12-4 - Body ground	Light control switch on (TAIL)	10 to 14 V
A24-4 - Body ground	Light control switch on (TAIL)	10 to 14 V

Standard resistance

Tester Connection	Specified Condition
A12-1 - Body ground	Below 1 Ω
A24-1 - Body ground	Below 1 Ω

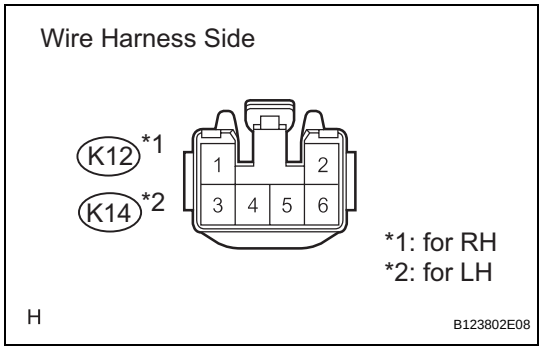
NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE BULB

LI

10 CHECK WIRE HARNESS (MAIN BODY ECU - REAR COMBINATION LIGHT)



(a) Disconnect the K12 and K14 rear combination light connectors.
(b) Measure the voltage and resistance of the wire harness side connectors.

Standard voltage

Tester Connection	Condition	Specified Condition
K14-2 - Body ground	Light control switch on (TAIL)	10 to 14 V
K12-2 - Body ground	Light control switch on (TAIL)	10 to 14 V

Standard resistance

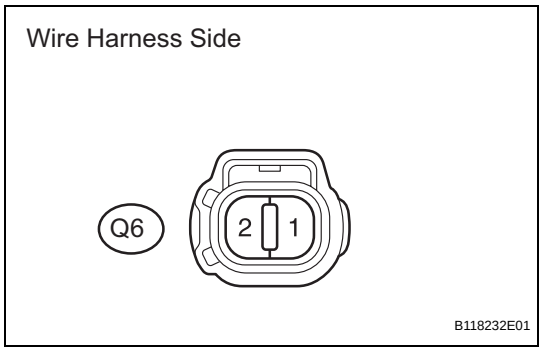
Tester Connection	Specified Condition
K14-1 - Body ground	Below 1 Ω
K12-1 - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE REAR COMBINATION LIGHT

11 CHECK WIRE HARNESS (MAIN BODY ECU - LICENSE PLATE LIGHT AND BODY GROUND)



(a) Disconnect the Q6 license plate light connector.
(b) Measure the voltage and resistance of the wire harness side connector.

Standard voltage

Tester Connection	Condition	Specified Condition
Q6-2 - Body ground	Light control switch on (TAIL)	10 to 14 V

Standard resistance

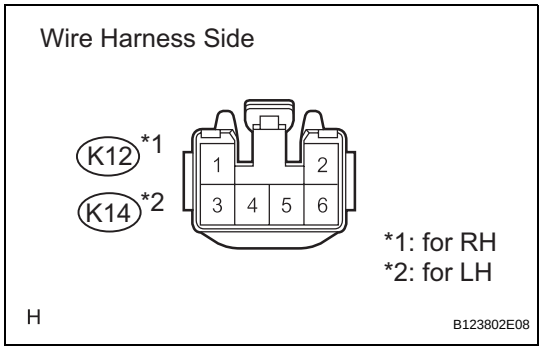
Tester Connection	Specified Condition
Q6-1 - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE BULB

12	CHECK WIRE HARNESS (MAIN BODY ECU - REAR COMBINATION LIGHT)



(a) Disconnect the K12 and K14 rear combination light connectors.
(b) Measure the voltage and resistance of the wire harness side connectors.

Standard voltage

Tester Connection	Condition	Specified Condition
K14-2 - Body ground	Light control switch on (TAIL)	10 to 14 V
K12-2 - Body ground	Light control switch on (TAIL)	10 to 14 V

Standard resistance

Tester Connection	Specified Condition
K14-1 - Body ground	Below 1 Ω
K12-1 - Body ground	Below 1 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

REPLACE BULB